

**Work-related Burnout in the Context of  
Leadership Style, Organisation Culture and Social Networks  
in a High Technology Trinidad and Tobago company**

By

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submitted for the doctoral degree in Business Administration

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## **Abstract**

There is a scarcity of burnout research in Trinidad and Tobago. The study examines an organisation about to embark on major transformational change, but has concerns regarding its leadership, dominant culture and lack of social network interactions to achieve desired performance and cohesiveness. The study is unique, hypothesising that leadership style, organisation culture and social networks collectively impact burnout. The research grounds its approach to understanding burnout in the Conservation of Resources theory (Hobfoll 1989). A mixed methodology approach (primarily positivist) using the most proven scales for all four components was undertaken. Consistent with conducting a social network analysis, a full network sampling of management team was used to test the hypotheses, ( see Borgatti et al. 2002). The structural equation path analysis examines the hypothesised relationships. Cronbach's Alphas and Descriptive Statistics were created using SPSS. The study used partial least squares (PLS-SEM) to estimate the structural equation model based upon the sample size (n=32) and causality considerations.

The results support the hypotheses, fitting well within the framework of the Conservation of Resources theory. The results indicate that the emotional exhaustion component of burnout is influenced directly by management centrality power, by workload reflected by operational centrality and by differences in preferred leadership style.

## **Acknowledgement**

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# Thesis Declaration Form

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## Glossary

**Keywords:** Burnout, MBI-GS, Leadership Style, MLQ-5x, Organisation Culture, OCAI, Social Networks, Social Network Centrality, ITC, ICT, Conservation of Resources, Trinidad and Tobago, and Structural Equation Modelling.

**Burnout.** The term ‘burnout’ describes the physical manifestation of workplace stress on an individual and is further manifested by exhaustion, individual emotional disconnect (depersonalisation), fatigue and lower level global accomplishment (Maslach 2001). The use of terms ‘burnout’, ‘work-related burnout’ and ‘employee-related burnout’ are used interchangeably through-out the manuscript.

**MBI-GS** (Maslach Burnout Inventory-General Services) by Schaufeli et al. (1996) is an instrument that measures the impact of ‘work-related’ burnout among all occupations (in a general services) environment. The full model of the MBI-GS is categorised into three constructs: emotional exhaustion, cynicism (depersonalisation), and professional personal efficacy.

**Leadership style.** This describes the individual’s ability to influence/motivate others in a way that they contribute towards the efficiency and accomplishment of the mission and goals of the organisation which has employed them.

**MLQ-5x.** Multifactor Leadership Questionnaire-5x short (Bass and Avolio 2000) is an instrument used in the study to measure the full model of leadership style across an organisation. The full model is categorised into three constructs examining the prevalent leaderships, namely: i) Transformational, ii) Transactional, and iii) Laissez-Faire, however only Transformational leadership is used in the present study.

**Organisation Culture.** The term organisation culture or ‘culture’ is used to describe those organisational behaviours, values, and assumptions which influence the long-term effectiveness of an organisation.

**OCAI.** The Organisational Culture Assessment Instrument was developed by Cameron and Quinn (1999, 2011) and is used to test the ‘dominant’ organisation culture type within an organisation. The OCAI is streamlined into four distinct ‘culture’ types or dimensions, namely market-oriented, hierarchy, clan and adhocracy.

**Social Networks/Social Network Analysis.** The networks in social network analysis represent the relationship interactions and communication flows between individuals within an organisation.

**Centrality.** The term ‘centrality’ or degree of centrality is used to describe the network relationships between the constructs. Centrality refers to the number of connections an actor has within a social network. The degree of centrality, relates to an individual’s power influence on information, other employees and operational issues within the organisation.

**Conservation of Resources (COR) theory.** The COR theory is based on a theory by Hobfoll (1989, 1993) which suggests that employees/individuals work to ensure the non-depletion of resources. The results of the COR theory produce a chain of events leading to ‘work-related’ burnout, (see Ito and Brotheridge 2003; Alarcon 2011; Barkhuizen et al. 2014).

**Trinidad and Tobago (TT).** The twin island Republic of Trinidad and Tobago in the Caribbean. Trinidad is the main island.

**Structural Equation Modelling (SEM).** The term SEM refers to a 2<sup>nd</sup> generation technique of statistical analysis which normally involves computational software models designed to estimate the complex relationships between constructs, including directional assumptions between the constructs. The conduct of SEM enables researchers to measure unobservable variables and the error in observed variables. The research highlights two types of SEM: Covariance-Based SEM (CB-SEM), and Partial Least Squares SEM (PLS-SEM). PLS-SEM is appropriate to use to develop theories in exploratory research, test exploratory hypotheses, and to explain the variance in the dependent variables while examining the model. The present study uses PLS-SEM.

## **List of Abbreviations**

MBI- GS	-	Maslach Burnout Inventory – General Sciences instrument
MBI- HSS	-	Maslach Burnout Inventory- Health Services Survey
MBI- ES	-	Maslach Burnout Inventory- Educational Services instrument
MLQ-5X	-	Multi-Leadership Questionnaire -Form 5x short
OCAI	-	Organisational Culture Assessment Index
SNA	-	Social Network Analysis
RQ	-	Research Question
PLS-SEM	-	Partial Least Squares -Structural Equation Modelling
CB-SEM	-	Co-Variance Based -Structural Equation Modelling
ICT	-	Information and Communications Technology
COR	-	Conservation of Resources Theory
SPSS	-	The Statistical Package for the Social Sciences



# **Chapter 1: The Research Significance**

## **1.1. Introduction**

The chapter commences with a brief overview of: i) the statement of the problem and gaps in the existing literature, ii) the research aim, objectives and significance, iii) the background of the research, iv) the contribution to practice and v) the research framework and study outline.

## **1.2. Problem Statement and Gaps in Research**

The major statement of the problem is two-fold. First is the lack of empirical research that ties together the four major components of work-related burnout, leadership style, organisation culture and social network relationships. While there are many studies examining work-related burnout with individual elements such as leadership style, organisation culture and network position, no published research empirically combines all four elements.

The second problem is the paucity of burnout research studies in the Caribbean region in general, and in Trinidad and Tobago specifically. While other published research from the Caribbean have mentioned the existence of ineffective leadership, impoverished organisation culture, low productivity and high employee attrition, none of the published studies have associated burnout with these elements. In addition, while a few researchers have referenced the existence of burnout in Trinidad and Tobago organisations by adopting burnout instruments which are specific to the Health Services environment (MBI – HSS) and educational institutions (MBI- ES) (Esnard and Mohammed 2014; Youseff 2016), these studies didn't provide any analysis as to causes of burnout or recommended solutions.

### *1.2.1. The Research Gaps*

The research therefore identifies the following gaps in the literature:

- i) an absence of scholarly research on workplace burnout and its relationship to any of the single elements of leadership style, organisational culture and network relationships in Trinidad and Tobago and the wider Caribbean.
- ii) no scholarly evidence of how work-related burnout is impacted by the three constructs of leadership style, organisational culture and social network relationships collectively and
- iii) a model which supports the impact of the three constructs of leadership, organisation culture and social network relationships on work-related burnout within the construct of the Conservation of Resources (COR) theory as developed by Hobfoll (1989) and supported by Alarcon's (2011) meta-analysis.

The last point is particularly important. The Conservation of Resources model by Hobfoll (1989) and other researchers (see Gorgievski and Hobfoll 2008; Alarcon 2011) theoretically links burnout to the dynamics of resource constraint within the social structure of organisations (culture) and the psycho-social elements of work relationships (social network relationships). Prior empirical research using the COR model also finds that the major dimension to burnout is emotional exhaustion, which in turn, is related to cynicism. The present research is the first study to develop, and then empirically test, a model that links work-related burnout to a combination of leadership style, organisation culture and social network relationships within the Conservation of Resources framework

### *1.2.2. The Research Aim and Significance*

The research aim of this study is to develop a hypothesis based (predictive) structural model which will best explain the relationship and impacts of preferred leadership style (see Bennett 2009), organisational culture and social network relationships on work-related burnout. The research seeks to provide empirical evidence through the testing of hypotheses (using a structural model) that these three constructs can collectively impact work-related burnout under the Conservation of Resources orientation (see Hobfoll 1989; Alarcon 2011).

The significance of this research, will provide a basis for management practice and for future academic research on burnout within Trinidad and Tobago and the wider English-speaking Caribbean.

### **1.3. Research Study - Background**

In previous research studies the constructs of work-related burnout, leadership style, organisation culture and social network position are all recognised individually as significant contributors to organisational success and performance. The aspect of work-related burnout has great importance to this research study.

Employee burnout oftentimes seems endemic in many organisations and can have many different negative consequences to organisational life. Burnout not only negatively affects organisational cohesion and performance in a general sense, but also negatively impacts the individual employees in a deeply personal manner, oftentimes resulting in health and social issues, reduced productivity, and dysfunctional behaviours. Yet, prior research suggest that burnout can be both understood and managed within organisations. The underlying argument of the present research study is that many organisational elements, in combination and individually, impact employee burnout.

The term ‘burnout’ used throughout this research specifically refers to the concept of ‘work-related’ or ‘occupationally-related burnout’, and the research hypotheses are grounded within the Conservation of Resources model. In this context, the underlying relationship is that an individual’s expenditure of emotional, financial or physical resources within an organisation leads to work-related burnout and stress. However, organisational elements related to a manager’s preferred leadership style, organisation culture, and social network position can either cause, or mitigate the individual’s expenditure of emotional, financial or physical resources, thus also affecting the level of burnout. In this research, the term ‘leadership style’ or leadership refers to the preferred transformation leadership style of a manager. Under the COR model it can be hypothesised that differences in a subordinate manager’s preferred leadership style versus senior management’s preferred leadership style may result in both coping strategies and resource expenditures. This, in turn, should be tied to burnout. Similarly, ‘organisation culture’ is the term used to describe the perceived ‘dominant’ culture type.

A mismatch of an employee's perception of culture, in turn, can lead to elements of burnout, particularly cynicism.

For example, differences in both preferred leadership style and perception of dominant culture may indicate the need for an employee to expend emotional, financial or physical resources to mitigate or manage these differences. One method of mitigating personal resource expenditures might be to withdraw from the work-related social network. But management by its very nature involves decision-making and communication with other managers.

Therefore, this study also investigates the employee's position within the social relationships in an organisation by determining how central an individual is within the subject organisation to the work itself, the key organisational influencer, and the cliques and power circles of friendship. Social network position may also indicate the need to expend resources, such as somebody who is in a central position working intensely on operations or technical issues. But withdrawal from the work-related network may also represent a coping process. These types of complex relationships can be well explained through the COR perspective.

As previously mentioned, while all three of the organisational constructs (leadership, organisation culture, and social network position) have been individually, empirically and theoretically linked to burnout, there are no prior empirical studies that examine the impact on burnout of all three constructs in combination. However, various combinations of these constructs have all been linked to each other in prior research.

For example, burnout has certainly been linked to leadership style (see Zopiatis and Constanti 2010). But numerous studies have also examined the impact of leadership style on organisational culture (see Cameron and Quinn 2011; Dunn et al. 2012). Yet there are few, if any, empirical studies that have tied both leadership and organisation culture together with burnout in the same study. Also, in examining the impact of social networks, the degree of social network activity has been linked to organisational culture (see Schaufeli et al. 2009), but not in combination with burnout.

In prior studies, burnout has also been linked to various measures of organisational and personal performance. This research examines performance from an individual level. Individuals are asked about their perception of 'department performance'. The limitation to an individual's 'department' performance and not 'organisational' performance, was based on the individual's locus of control for this study.

Personal efficacy, often referenced as a dimension of burnout, also represents a personal assessment of effectiveness. Personal efficacy is also examined in this research.

#### **1.4. Contribution to Practice**

The subject of the study is a high technology company located in Trinidad and Tobago. The choice of the research sample was based on access and relevance. The company is the only indigenous wholly-owned company amongst three other multi-national high technology providers in the same industry sector (Information Technology) in Trinidad and Tobago. The adoption of a single organisation and testing of the full population of the network sample's management team (n=32), has been used by prior researchers (see Makri and Scandura 2010; Carmeli et al. 2011; Pearce and Doh 2012). The sample size (n=32) of the study is consistent with many other 'full network sample' empirical studies examining social network relationships. While this study technically examines a single company, it should be noted, that the sample is actually a business Group of three subsidiary organisations, all with a high degree of independence, in addition to the Group's overall management team.

The study was motivated, in part, by a new Group CEO who had expressed an objective to extend the Company's technology footprint and growth rate of success. Based on these statements from the Group CEO, the issue of transformational leadership scale was considered a key component. However, the company also identified its need for a highly cohesive management team and the 'adoption' of the right culture to achieve this objective.

The composition of the sample used in the study is probably reflective of similar management teams of larger firms in the Caribbean.

The gender composition of the Group's senior executives was 100% male, while among the rest of the three subsidiaries' management teams only one female was present. All senior executives had a time in service greater than 12 years, while the rest of the management sample had generally served longer than 5 years.

Given the generalisability of the sample census to be predominantly male, the composition of the results reported are based on the impact on burnout for a generally male population.

To develop a predictive model which embraces the uniqueness of the relationship and provides testable quantitative results for this research, a structural equation modelling process using the Partial Least Squares (PLS-SEM) methodology was adopted.

Given the nature of this research, the scales used, and the population sampled, a "path analysis" model using PLS-SEM was considered the best methodological choice for this research following an examination of other forms of structural equation analysis. PLS-SEM represents a 'best fit' for the objectives of the research by providing a positivist result (quantitative analysis supporting theoretically based hypotheses). The structural equation model will be the basis of the research and fits well within the underlying Conservation of Resources Theory.

In examining the constructs of interest, only well recognised and accepted instruments were used. Instruments and permissions were obtained from the licensee holders and repositories of Mind Garden (web: <http://www.mindgarden.com>) and OCAI institute (web: <http://www.ocaionline.com>).

The key construct of work-related burnout was examined using the Maslach Burnout Inventory (MBI- GS) (Maslach et al. 2001) without modification. The construct of leadership was examined using the MLQ-5x by Bass and Avolio (2000), again without modification.

While the full leadership model (MLQ-5x) was administered to the full network sample, only the Transformational-Inspirational Motivation sub-scale was adopted as it was: i) the leadership component for realising transformational change that best reflects the CEO's comments about change, ii) the dimension of transformational leadership that typically involves high levels of interpersonal contact with other managers (and thus creates potential resource use issues under the COR model) and, iii) a transformational leadership dimension

that satisfied the minimum Cronbach Alpha limit established for the present research. To measure how the management team perceived the dominant organisation culture, the Organisation Culture Assessment Instrument (OCAI) was used without modification.

Additionally, given the need to understand the interactions and relationships among the management (to achieve a sense of ‘cohesiveness’) a social network analysis was conducted.

A 100% census process (see Cross et al. 2002; Borgatti and Cross 2003; Pryke 2012) was adopted to accurately measure social network relationships in the areas of management/strategy communication, operational/technical communication and friendship ties. The key statistic used to measure network position was a commonly used centrality measure (Freeman’s degree centrality).

UCINET was used to estimate centrality. In addition, network relationships were graphically examined with the UCINET-Netdraw program.

In addition to the stated research problem and objectives, the research was also driven by practical considerations that can assist senior managers, such as:

- i) understanding resource retention and risk mitigation strategies against the effects of work-related burnout amongst key staff,
- ii) understanding the importance of centrality and power relationships to enable more enhanced decision-making,
- iii) understanding how differences in preferred leadership styles between senior management and subordinate managers can influence organisation behaviours, such as withdrawal strategies, and work-related burnout and
- iv) understanding how differences in a manager’s perception of the dominant organisation culture can impact both employee burnout, and ultimately personal efficacy.

Understanding these issues is critical to the success of any senior management team since many of these constructs, perceptions and behaviours can be influenced by senior management decisions. But, senior management can take appropriate action only if these relationships are clearly understood and appreciated.

### 1.5. Research Questions

In this context, the present research explores the broad issue of the combined relationship between leadership style, organisation culture, social network position, and burnout. To do this, five specific research questions were developed:

*Q1: What is the relationship between the various dimensions of managers' work-related burnout and their perceptions of departmental and personal performance?*

*Q2: What is the relationship between a manager's personal style of leadership (inspirational leadership) and work-related burnout?*

*Q3: What is the relationship between managers' differences in personal leadership styles and their position in the organisation's social network?*

*Q4: What is the relationship between managers' positions in the social network and their perception of the organisation's culture?*

*Q5: What is the relationship between managers' social network work-related centrality relationships (management decision-making and daily operations) and their friendship relationships?*

Each of these research questions leads to a series of testable hypotheses.

### 1.6. Thesis Outline/Layout

The thesis is structured into six chapters: Chapter 1 – The Research Significance, Chapter 2 - The Literature Review, Chapter 3 – Hypotheses and Structural Equation Model, Chapter 4- Research Approach, Instruments and Scales, Chapter 5 - The Data Analysis, and Chapter 6 - Discussion and Conclusions.

Chapter 1 - The Research Significance, provides the basis by which the research was structured and includes the introduction, background to the research study, the problem statement of the research, the contribution to practice and the thesis outline and layout.



Chapter 2 - The Literature Review, begins with providing a synopsis in the introduction and an examination of each of the elements, beginning with the construct and scholarly research on burnout, including the application of the Conservation of Resources theory to burnout. The rest of the chapter provides more specific information on the constructs of burnout, leadership, organisation culture and social networks.

Chapter 3- Hypotheses and Structural Equation model. This chapter addresses two key areas - the literature gaps leading to the research question/hypotheses and the structural equation model (which is then estimated in Chapter 5). In examining the structural model, the chapter offers a discussion of: i) the rationale for the choice of PLS-SEM, ii) the use of a path analysis approach, iii) a brief discussion of mediating and moderating variables within the structural model or considered within the research, iv) a discussion on the specific questions and hypotheses in relation to the research philosophy (discussed in greater detail in Chapter 4) and v) the elements which consist of endogenous (independent) and exogenous (dependent) variables within the structural model for testing in Chapter 5).

Chapter 4 - Research Philosophy and Measurement Scales - Chapter 4 discusses the guiding principles leading to the research approach/paradigm (epistemology, ontology, phenomenology, positivist), the research sample, the choice of the research instruments adopted, the research ethics and the methodologies used in the analysis. The Chapter also gives insight as to the rationale why a mixed methodology but primarily positivist stance was adopted throughout the course of this study. Highlighted in the chapter are the analytical tools adopted, such as UCINET (social network analysis software), and SPSS (statistical software) and mention of the permissions granted and access (to resources and material) from the respondent sample and instrument/scale providers such as Mind-Garden.

Chapter 5 - The Data Analysis - reports the results from the structural equation model discussed in Chapter 3. The chapter is divided into two segments. The first section provides the summary statistics including Cronbach's Alphas. The second section of the chapter presents the estimated structural equation model.

The structural equation model allows for the examination of the hypotheses collectively testing the constructs of burnout (emotional exhaustion, cynicism and efficacy), differences in preferred transformation leadership style (inspiration motivation), differences in the perception of dominant culture, social network centrality (management, operational and friendships relationships) and individual perceptions of department performance.

The results and findings of social network analysis from the full network sample (census) on the management group are also visually represented via the NetDraw feature of UCINET and provides a discussion on what this means for management.

Chapter 6 - The Discussion and Conclusions - provides a summary report on the findings of the study, the implications for management practice, limitations, and recommendations for future research.

### **1.7. Chapter 1: Summary**

This Chapter sets the basis for the research study. The sections above provided the introduction to: i) the research significance, and ii) the outline and framework of the research. The next chapter, the Literature Review, examines the scholarly research on the constructs and their relatedness to the aim of the current study.

## **Chapter 2: Literature Review**

### **2.1. Introduction**

The previous chapter identified an important research gap in the burnout literature exists - no previous study has empirically examined collectively the impact of leadership style, organisation culture and an employee's position in the communication network on employee burnout.

In Chapter 1 it was mentioned that recent burnout studies are often grounded in the Conservation of Resources (COR) theory (Hobfoll 1989). Recent reviews and meta-studies by Gorgievski and Hobfoll (2008), Alarcon (2011) and Barkhuizen et al. (2014) provide support for the COR perspective of burnout, and thus the essential hypotheses in this study have been placed within the perspective of the COR theory.

Section 2.2, begins with an introduction to the study of burnout by examining the definitions of burnout, the different constructs used in the study of burnout, and the application of COR theory to the study of burnout. The section also provides insight to scholarly work conducted within the Caribbean on the topic of burnout.

### **2.2. Burnout**

The foundation of nearly all burnout research, particularly 'employee-related' burnout within organisations, is generally attributed to the existence of various emotional exhaustion stressors (Maslach et al. 2001 and Maslach 2011). This key relationship forms the basis of the many definitions offered for the term 'burnout'.

#### *2.2.1. The Components of Employee-Related Burnout Research*

The pioneering phase of employee-related burnout research can be traced to Freudenberger (1975), a psychiatrist, and to Maslach (1976), a social psychologist, who based their studies on health-related samples examining employee emotions within the workplace. The early research suggests that the key triggers of individual burnout were *the job, depersonalisation* and *distanced relationships*.

While the existence of burnout is broadly recognised, the exact concept of burnout has been referred to as “elusive” by many researchers as there is no one standard definition of the term (Maslach et al. 2001, p.402). Attempts to define the concept have produced varied interpretations. A commonly used definition of burnout describes burnout as the “prolonged response to chronic emotional and interpersonal stressors on the job and is defined by the three dimensions of exhaustion, cynicism and inefficacy” (Maslach et al. 2001, p.397).

Borritz et al.’s (2010) study of six human services organisations, refer to burnout as the degree of physical and psychological fatigue by individuals, while Galbraith and Merrill (2012) describe the key components of burnout as systemic stress between a person and their expectations at an activity.

### *2.2.2. Examining Burnout*

After Freudemberger’s (1975) and Maslach’s (1976) original efforts, the next phase of burnout research generally focused on the empirical assessment of employee-related burnout and the development of various scales and measurement instruments. The result was the development of the Maslach Burnout Inventory (MBI) by Maslach and Jackson (1981) which remains the most commonly used instrument in the English-speaking world for assessing burnout. Prior versions of the MBI targeted toward specific sectors were developed in the 1980’s (MBI-HS for health services and MBI-ES, for educational institution). However, the need for a robust instrument addressing general service professions and populations led to the development of the Maslach Burnout Inventory-General Survey (MBI-GS) by Schaufeli et al. (1996) which is still used extensively today. The MBI-GS has three sub-scales: i) Emotional Exhaustion, ii) Cynicism and iii) Professional Personal Efficacy.

*Emotional Exhaustion.* Petitta and Vecchione (2011) describe the exhaustion component as “feelings of being over-extended and depleted of one’s emotional and physical resources and it represents the basic individual stress experience” (Petitta and Vecchione 2011, p.100). Hetland et al. (2007) describe the emotional exhaustion component experienced by individuals as “being emotionally overextended and depleted of one’s emotional resources” (Hetland et al. 2007, p.58). This psychological association to depletion of ‘emotional resources’ within the emotional exhaustion dimension is most aligned to the Conservation of Resource (COR) theory.

*Cynicism.* The second dimension in the MBI-GS scale is *cynicism*, which is described as the individual’s attitude of pessimism and desire to distance from the work itself (Demerouti et al. 2003). Some researchers suggest, that cynicism is a work-related withdrawal process, but not necessarily withdrawal from people (Schaufeli and Salanova 2007).

*Professional personal efficacy.* The last dimension in the MBI-GS scale is *professional personal efficacy*. Schaufeli and Salanova (2007) claim that “professional efficacy has a broader focus compared with the corresponding MBI personal accomplishment scale encompassing both social and non-social aspects of occupational accomplishment” (Schaufeli and Salanova 2007, p.178). They also contend that “high levels of exhaustion and cynicism and low levels of efficacy are indicative of burnout, hence positively-worded items that assess efficacy (For example, I efficiently solve any problems that may arise in my work) which are then reversed to indicate professional inefficacy” (Schaufeli and Salanova 2007, p.178).

One of the recent developments in the burnout literature appears to be the consensus that the two dimensions of emotional exhaustion and cynicism are the core contributing components to burnout (see Langelaan et al. 2006), whereas ‘personal efficacy’ can be seen from a variety of perspectives. Langelaan et al. (2006) also note that “various studies have documented a positive relationship of burnout (exhaustion and cynicism) with neuroticism, whereas the relationship with extraversion is somewhat weaker and negative” (Langelaan et al. 2006, p.523).

Although the MBI-GS continues to be the most used scale for measuring work-related burnout for scholarly research, it should be noted that other burnout scales have been developed and used in research. These include the following:

- i) Shirom Melamed Burnout questionnaire (SMBQ) - developed by Shirom (1989) and Melamed et al. (1992) for measuring burnout effects through physical symptoms of stress,
- ii) Oldenburg Burnout Inventory (OLBI) - developed by Demerouti et al. (2003). This scale specifically examines the long-term positive and negative effects of emotional exhaustion and disengagement from work. The factorial and convergent validity of the OLBI is similar to the MBI-GS and
- iii) Copenhagen Burnout Inventory (CBI) - developed by Kristensen et al. (2005). The CBI instrument distils the concept of burnout into three sub-scales: i) personal, ii) work-related and iii) client-related.

The next section, examines the Conservation of Resources (COR) theory (Hobfoll 1989) and its relationship to burnout research.

### *2.2.3. Conservation of Resources Theory and Burnout Research*

Chapter 1 referenced the Conservation of Resources (COR) theory by Hobfoll (1989) and other researchers in forming a theoretical basis to recent burnout research. The Conservation of Resources (COR) theory developed by Hobfoll (1989) has been used by several recent scholars to link individual resource control and optimisation of an individual's motivation to work to ensure sufficiency. It is this need to ensure resource sufficiency which has made COR the preferred theory for explaining work-related burnout in organisations (Ito and Brotheridge 2003; Alarcon 2011; Barkhuizen et al. 2014). The most basic concept associated with COR theory is an individual's need and desire to obtain, retain and protect what they value, particularly if these resources are under threat (Hobfoll 1989; Hobfoll and Shirom 1993; Hobfoll 2002).

The COR theory also recognises that resource depletion or losses are more important than resource gains, and that an individual's efforts are primarily to develop strategies to protect or mitigate these losses. For example, under COR theory, to cope with a loss of investment a person may invest resources to mitigate future losses or to recover from past losses. Thus, the underlying argument that ties COR with burnout is that an individual must invest resources to mitigate against future losses or to recover from past losses, and that this investment of resources, whether emotional, financial, or physical, then leads to stress and burnout (Hobfoll 1989; Alarcon 2011; Halbesleben et al. 2014).

Ito and Brotheridge (2003) also examined the COR burnout model and the notion of eroded time-based resources (see also Latack and Havlovic 1992; Frone et al. 1997a). The expanded COR model of burnout by Ito and Brotheridge (2003) is that "resources have a direct influence on strain, as well as an indirect influence on strain through coping strategies" (Ito and Brotheridge 2003, p.492). Within this context, the degree that coping strategies are possible, become highly relevant to an individual's activities within the workplace. Ito and Brotheridge (2003) define resources to include individual locus of control, co-worker support, autonomy and personal power. Coping strategies form an important basis for several hypotheses in this present study.

In Alarcon's (2011) meta-analysis of burnout and COR, three hypotheses are proposed. The first hypothesis links demand on resources to burnout as positive by examining *role ambiguity*, *role conflict*, and *workload*. The second hypothesis links: i) the degree of resource control to the individual's perceived control over resources, and ii) possible negative relations of work autonomy to burnout. The third hypothesis, links job satisfaction and commitment and burnout as negative. The meta-analysis examined 231 scholarly published articles using the MBI family of burnout scales. While, the results of the meta-analysis support all three hypotheses, the most relevant to this present research are the first two hypotheses in the Alarcon's (2011) meta-analysis. The meta-analysis results indicate that the demands for resources had its greatest effect on the emotional exhaustion construct than on the cynicism construct.

For example, Alarcon's (2011) concludes that "emotional exhaustion occurs first, and cynicism and reduced personal accomplishment are ancillary. As such, COR suggests that demands should have the strongest relation with exhaustion and weaker relations with cynicism and reduced personal accomplishment" (Alarcon 2011, p.555).

Alarcon (2011) also states that "in the context of the stress experience, resource loss and gain are central in high demand situations." (Alarcon 2011, p.550). The implications for this research with the sample company is significant in terms of its competitive environment, the executive demands on the ability of the company to transform and change, and the likely accompaniment of resource losses and gains which can contribute to burnout. Alarcon (2011), also finds that, "the prolonged experience of low resources and high demands leads to an erosion of other resources such as energy, identification and perceived efficacy which is the burnout process" (Alarcon 2011, p.550).

The third hypothesis offered by Alarcon's (2011) meta-study of the COR and burnout, indicates that job satisfaction and commitment are negatively related to burnout. This last hypothesis addresses the professional personal efficacy dimension within the MBI scale.

#### *2.2.4. The relationship between Employee Engagement and Burnout*

The notion of 'employee engagement' is often mentioned in both the professional and academic literature. Schaufeli et al. (2002) define the engagement concept as a "positive fulfilling, work-related state of mind that is characterised by vigour, dedication, and absorption" (Schaufeli et al. 2002, p.74).

Vigour is associated with higher levels of work engagement and is described as an energetic state of energy and mental resilience while working and continuing, despite difficulties. Dedication is described as an individual's sense of significance, enthusiasm, inspiration, pride and challenge.

Lastly, absorption refers to the complete and happy immersion into one's work to the extent of an inability to self-detach. Similarities exist between employee engagement and the burnout sub-scale of personal efficacy with both being considered indicators of well-being.



Other scholars tie the concept of employee engagement to the energy expended by individuals as a tendency to self-evaluate based on work effectiveness (see Schutte et al. 2002). Both Maslach and Leiter (2008) as well as Schaufeli and Bakker (2004) argue that work-related burnout is simply the antithesis of employee engagement.

The combination of work-related burnout and employee engagement was examined in the JD-R model by Schaufeli and Bakker (2004). The JD-R model addresses: i) the physical and psychological symptoms associated with the job demands, and ii) the motivational process linking job resources to organisational outcomes through employee engagement.

Other authors have argued that similarities exist between employee engagement and work-related burnout, particularly in the cynicism dimension of burnout (see Cartwright and Holmes 2006). For example, Schaufeli and Salanova (2007) argue, “instead, we claim that in addition to exhaustion and cynicism, inefficacy measured with a newly developed scale characterises burnout. MBI-efficacy is apparently related to work engagement, considered as the positive antithesis of burnout” (Schaufeli and Salanova 2007, p.177).

In summary, while there is no conclusive agreement amongst researchers on the construct of employee engagement, there is empirical evidence indicating a strong correlation between the MBI dimension of cynicism and the various scales that are designed to measure employee engagement (Cartwright and Holmes 2006). Positive results are also reported between other burnout dimensions to job demands and resources to employee engagement (Crawford et al. 2010).

#### *2.2.5. Caribbean Literature and Burnout*

This section examines the contributions of Caribbean researchers to the study of burnout. In reviewing the existing empirical literature using Caribbean, and specifically Trinidad and Tobago samples, it is evident that there are only a few scholarly articles which address the topic of ‘employee’ or ‘work-related’ work burnout.

The few papers mentioned in this section all relate to the health and educational sectors with none being specifically related to other occupations or industry sectors. This lack of burnout-related research in the Caribbean basin is another noted gap for which this research undertaking seeks to fulfil.

In one of the Caribbean-based research studies, Youseff (2016) explores the prevalence of stress, burnout and depression amongst medical students within Trinidad and Tobago. A cross-sectional survey design was used to sample 381 health-related students. Their data was collected utilising standardised questionnaires that assess stress, burnout (MBI), and depressive symptoms. Youseff (2016) reports results that “students demonstrated high levels of stress and a significant prevalence of burnout (52%) and depressive symptoms (40%). Final-year students demonstrated higher levels of burnout and depressive symptoms” (Youseff 2016, p.69). The author attributes the following contributors to burnout as: i) students lacking emotional support, ii) little or no opportunity for relaxation and exercise and iii) a general feeling amongst students of a lack of control of their daily schedules. In addition to the findings, Youseff (2016) reports a Cronbach Alpha of 0.77 in the three constructs of burnout identified as EE (Emotional Exhaustion), DP (Depersonalisation), and PA (Personal Accomplishment).

In another research undertaking, Esnard and Mohammed (2014) conducted a study of prospective undergraduate teachers’ in Trinidad and Tobago. Using the Perceived Social Support (MSPSS) and Beck’s Depression Inventory-II (BDI-II) scales, the researchers examined a cross-sectional sample of 506 prospective teachers from two educational campuses. While the authors did not specifically examine burnout, they noted that, “social support from family, friends, and significant others as persons with whom we are socially tied ... are key interpersonal factors which significantly influence reported or observed levels of depression” (Esnard and Mohammed 2014, p.24).

### *2.2.6. Summary on Burnout*

The sections above examined several different aspects on the concept of work-related burnout. The literature highlighted the contribution of Alarcon's (2011) meta-analysis that ties the concept of burnout to the framework of Hobfoll's (1989) Conservation of Resources (COR) theory with three supported hypotheses, and the use of COR as an underlying framework for burnout studies by other scholars such as Ito and Brotheridge (2003), Barkhuizen et al. (2014) and Halbesleben et al. (2014).

Additionally, in exploring the literature similarities to the research objectives of other scholars and the testing of the hypothesis can also be aligned to the present study. In general, it is broadly recognised that the two sub-scales, dimensions or components of burnout (using the MBI-GS framework) of emotional exhaustion and cynicism are the core components of individual work-related burnout.

Additionally, the scarcity of Caribbean scholarly research on the topic of work-related burnout lends greater importance to the weight of the present research. The present study is based upon the notion that elements of leadership style, organisation culture, and social network position, in combination with each other, significantly impacts the level of employee burnout, and then uses a Caribbean high technology firm as its sample.

## **2.3. Connecting Transformational Leadership to Burnout**

This section addresses the concept of leadership style as it relates to an examination of the leadership model of Bass and Avolio (1995) and Bass and Avolio (2000). The Bass and Avolio (2000) model of transformational leadership is the model used in the present research. The section also explores prior empirical studies that examine the impact of leadership on burnout.

### *2.3.1. Definition of Leadership*

Like 'burnout', the definition of the term 'leadership' has also been described by many scholars as "elusive" (see Gray 2012; Singh et al. 2012). For example, Gray (2012) specifically notes, "leadership an elusive concept" (Gray 2012, p.99).

Likewise, Singh et al. (2012) states that ‘leadership remains an elusive concept despite years of research’ (Singh et al. 2012, p.6). Similarly, Malik et al. (2014) contend that “the term leadership has different connotations to different people that create ambiguity in meaning” (Malik et al. 2014, p.170). Malik et al. (2014) also offer a summarised definition for the term ‘leadership’ describing it as “the art or a process of influencing people and motivating them to work willingly and enthusiastically towards the attainment of common goals through maximum application of his/ her capabilities and in the process leader facilitates progress and inspires the group to attain goals which the organisation has set for itself” (Malik et al. 2014, p.170).

One notable contribution to leadership theory was the concept of transformational leadership by Bass (1985) and the discussion of how the transformational leadership style influences positive organisational outcomes (see also Bennis and Nanus 1985; Conger and Kanungo 1987; Bennis 1991; Shamir et al. 1993; Waldman et al. 2001; Zwingmann et al. 2014). The idea of transformational leadership is the leader’s ability to effect transformational change and communicate the vision through a variety of mechanisms. This requires leadership abilities different from positional power, particularly in highly technical teams (Barnes and Kriger 1986).

Bass and Avolio (1995) developed what is often referred to as a “full leadership model” and the associated Bass and Avolio (2000) Multi-Leadership Questionnaire (MLQ-5x). Antonakis et al. (2003) explains that the MLQ-5x scale in its current form consists of “nine single order factors comprised of five transformational leadership factors, three transactional leadership factors, and one non-transactional laissez-faire leadership” (Antonakis et al. 2003, p.264). There has been strong support for the MLQ-5x scale in measuring leadership behaviours (see Antonakis et al. 2003; Cole and Bedeian 2007; Michel et al. 2010). Other researchers such as Cole and Bedeian (2007) support the use of the Bass and Avolio (2000) model by stating it was “an especially useful framework for advancing leadership research” (Cole and Bedeian 2007, p. 450).

The sub-scale of transformation leadership in the MLQ-5x is also currently one of the most commonly used scales for measuring leadership styles within the transformational leadership perspective (see Antonakis et al. 2003; Cole and Bedeian 2007; Michel et al. 2010). The concept of transformational leadership measured by the MLQ-5x is also the sub-scale that has been most associated with the concept of work-related burnout.

In defining the term ‘transformational leadership’ Arnold et al. (2015) describes this type of leadership as “associated with a high level of personal resources” (Arnold et al. 2015, p.482). Heinitz et al. (2005) describe the term ‘transformational leadership’ as “leadership that results in a change of the goals and necessities of subordinates” (Heinitz et al. 2005, p.182). This combination of “personal resources” and interactions with subordinates makes the idea of transformational leadership particularly relevant to the COR approach.

Antonakis et al. (2003) described the five sub-scales under Transformational Leadership as:

- i) Idealised influence (attributed) – leadership behaviours associated with social charisma irrespective of the perceived power or leader’s confidence.
- ii) Idealised influence (behaviour) - the leadership behaviours associated with the charismatic actions of the leader which are centred on the individual’s beliefs, values and a sense of mission.
- iii) Inspirational motivation - according to Antonakis et al. (2003) is best defined as “the ways leaders engage their followers by viewing the future with optimism, stressing ambitious goals, projecting an idealised vision and communicating to followers that the vision is achievable” (Antonakis et al. 2003, pp.264-265).
- iv) Intellectual stimulation - defined by Antonakis et al. (2003) as “leaders’ actions that appeal to followers’ sense of logic and analysis by challenging followers to think creatively and find solutions to difficult problems” (Antonakis et al. 2003, p. 265).

- v) Individualised consideration - described in Antonakis et al. (2003) as “leader behaviour that contributes to follower satisfaction by advising supporting and paying attention to the individual needs of followers and thus allowing them to develop and self-actualise” (Antonakis et al. 2003, p.265).

### *2.3.2. Leadership Style and Burnout: An Association?*

Three questions are often posed that associate the concept of leadership style to burnout. These are:

- i) Can transformational leadership mitigate the level of work-related burnout in an organisation?
- ii) Does burnout within an organisation reduce the effectiveness of management?
- iii) Do differences in managerial style, such as the preferred leadership styles between senior management and subordinate management levels increase work-related burnout?

Examining whether an association exists between leadership style (particularly transformational leadership) and burnout has been a research topic of many scholars as Zopiatis and Constanti (2010) who published an article entitled, ‘Leadership styles and burnout is there an association?’ Another article specifically addressing the connection between transformational leadership and work-related burnout was by Gill, Flaschner and Shachar’s (2006) and titled, ‘Mitigating stress and burnout by implementing transformational leadership’. Gill et al. (2006) argue that a direct relationship exists between the two concepts. They further argue that the “degree of perceived burnout is related to perceived stress and the degree of perceived stress is related to the type of leadership employed by managers” (Gill et al. 2006, p.469).

Similarly, Oshagbemi and Gill (2003) suggest, “that whether or not a supervisory leadership style is effective depends on the supervisor’s influence in the hierarchal system” (Oshagbemi and Gill 2003, p.95). Oshagbemi and Gill (2003) continue, noting that, “followers may model the behaviour of their superiors or the superiors may select lower-level supervisors who tend to have similar styles of behaviour with themselves” (Oshagbemi and Gill 2003, p.96).

This infers that staff with dissimilar behaviours are likely to be exempt from the inner-circle of management, or they will need to alter their leadership orientation to ‘fit’ within the inner-circle. Oshagbemi and Gill’s (2003) refer to this as “the *falling dominoes effect*” (Oshagbemi and Gill 2003, p.96). In other published research, the impact of abusive supervision has also been a major factor contributory to burnout and specifically the conservation of resources.

In Whitman et al. (2014), the authors highlight emotional exhaustion as being a key factor in COR theory stating “Conservation of resources serves as a useful framework to understand how individuals respond to chronic work stress. One response in particular, burnout, is depicted as a syndrome that includes three dimensions: emotional exhaustion, cynicism, and inefficacy ...researchers, however, have generally focused on the emotional exhaustion dimension due to the reliability in its relationship with organisational outcome variables” (Whitman et al. 2014, p.40). Whitman et al. (2014), further state that “Individuals who experience emotional exhaustion also experience resource depletion due to ongoing stress and excessive job demands... exhausted individuals who experience a loss of resources may adopt a defensive position to protect or conserve remaining resources in order to prevent further resource loss. Focusing their efforts on resource conservation precludes these individuals from engaging in opportunities aimed at acquiring resources” (Whitman et al. 2014, p.40).

This is an important conclusion, and a foundation for one of the research questions examined in the present study, that is, do differences in the preferred leadership styles between superiors and lower level managers have a direct impact on work-related burnout, particularly within the COR perspective?

### *2.3.3. The COR theory and Transformational Leadership*

COR theory also has relevance to understanding leadership. For example, Byrne et al. (2013) state that “while COR theory has been studied extensively within the stress literature, and increasingly within organisational research, more broadly to date, we are among the few to apply this theoretical lens to leadership” (Byrne et al. 2014, p.356). Their research findings suggest a linkage of the lower levels of transformational leadership to higher levels of abusive supervision (differences in senior management behaviour to subordinates) resulting in resource depletion or burnout (see Byrne et al. 2014, p.344).

The Byrne et al. (2014) study, used the shortened version of the Bass' MLQ-5x, and like the present study only focused on those dimensions of transformational leadership.

The dimension of emotional exhaustion has been particularly examined within the context of leadership (see Cole and Bedeian 2007). Cole and Bedeian (2007) report that:

- i) emotional exhaustion interacts in a less direct manner with either contingent reward or transformational leadership in predicting work commitment,
- ii) ineffective leadership behaviours impact on group members work commitment when emotional exhaustion is high, and
- iii) that social influence tends to weaken relationships between work commitments and **is** associated with emotional exhaustion.

Cole and Bedeian's (2007) primary recommendation to management is to mitigate against the effects of burnout, observing that "even a minimal occurrence of emotional exhaustion warrants attention." (Cole and Bedeian 2007, p.460).

Other studies, have found that leadership style can impact the level of both employee burnout and stress-related health (Stordeur et al. 2001; McVicar 2003; Westerlund et al. 2004; Nyberg et al. 2005; Arnold et al. 2015).

For example, Arnold et al. (2015) contend that "leaders will use different emotion regulation strategies because of differing levels of personal resources, some of these emotion regulation strategies will predict resource drain and burnout" (Arnold et al. 2015, p.481). The use of coping strategies is substantiated by Arnold et al. (2015), noting that "by empirically testing the relationships between emotion regulation strategies and burnout with a leader sample demonstrating the influence leadership style has on both a leaders' reported display and regulation of emotions, and the impact this can have on leaders' own mental health over time" (Arnold et al. 2015, p.489).

A similar view was presented by Zopiatis and Constanti (2010). They argue that, "transformational leadership has a significant positive association with personal accomplishment and is negatively related to emotional exhaustion and depersonalisation" (Zopiatis and Constanti 2010, p.300).



Frost (2004) also argues that “people tend to disconnect from their work and its demands and they begin to focus even to obsess, on the pain they feel and its perceived sources” (Frost 2004, p. 112).

#### *2.3.4. Burnout and Leadership Research in Trinidad and Tobago*

The availability of Caribbean research related to leadership styles is somewhat limited. In addition, the lack of scholarly research examining the relationship of leadership and work-related burnout together is noted as an important gap in the Caribbean literature. As La Guerre and Bissessar (2009) conclude, “the literature has been silent on the relationship between the nature of institutions and the impact that this had upon leadership styles” (La Guerre and Bissessar 2009, p.125). Additionally, only one study could be identified that examines the transformational leadership model within Trinidad and Tobago and the Caribbean (Simon and Preziosi, 2009).

In Simon and Preziosi’s (2009) study, the authors identify a relationship between the transformational leadership of Small and Medium Enterprises (SME’s) in Trinidad and Tobago and organisation performance, citing the use of Bass and Avolio’s (2000) MLQ-5x. The authors contend that “correlation data were used to determine relationships between performance and leadership style” (Simon and Preziosi 2009, p.35) and that “no significant relationship between each of the MLQ sub-scales and organisation performance was found” (Simon and Preziosi 2009, p.35).

In summary, there is a knowledge gap on scholarly work on transformational leadership and work-related burnout in the Caribbean in general, and specifically in Trinidad and Tobago. While this may be evident, there is theoretical support linking leadership styles to burnout grounded within the COR theory (see Byrne et al. 2014; Arnold et al.2015).

## 2.4. Organisation Culture

Like the previous discussions of the impact of leadership on burnout, the following discussion examines the corresponding relationship of burnout and organisation culture.

### 2.4.1. *Definitions of Organisation Culture*

Wallach (1983) defines organisation culture as the shared understanding by employees on the way things are done in an organisation. Generally, definitions of the organisation culture include the concept of 'shared values' (see Han, 2012 for a review).

Other references to what constitutes organisation culture include Dharmayanti et al. (2011) who offer that, "organisation culture is something intangible but can critically impact on an organisation's activities" (Dharmayanti et al. 2011, p.4). Straub et al. (2002) write that "there is a wide-ranging and contradictory scholarly opinion of what constitutes the set or even a reasonable set of values, norms and beliefs for culture" (Straub et al. 2002, p.13). Likewise, Han (2012) defines organisation culture as "the pattern of shared values and beliefs that help individuals understand the organisational functioning and thus provide them with norms for behaviour in the organisation" (Han 2012, p. 208). Dimitrios and Konstantinos (2014) refer to 'an organisation's culture as "a set of beliefs, values, customs, traditions and practices" (Dimitrios and Konstantinos 2014, p.43). And, a more simplified version of the definition of organisation culture presented by Schein (2009) states that "Culture is just the way we do things around here" (Schein 2009, p.21).

Martins and Martins (2002) argue that "the topic of organisational culture presents two contradictory images. The first is of 'culture' as the 'glue' that holds the organisation together and the second regards it as a central part of the change process" (Martins and Martins 2002, p.58). Sarros et al. (2008) however, state, "whereas organisational culture focuses on the shared behavioural expectations and normative beliefs in work units, climate describes the way individuals perceive the personal impact of their work environment on themselves" (Sarros et al. 2008, p.147).

Finally, Glisson and James (2002) define the organisational culture climate as “the way people perceive their work environment and the ‘culture’ as the way things are done in an organisational unit, climate is defined as a property of the individual and ‘culture’ is defined as a property of the organisation” (Glisson and James 2002, p.769).

In summary, based upon its current usage as exemplified in the many definitions outlined above, the construct of ‘organisation culture’ can be best described as: i) a set of shared values, ii) a collective way of thought, iii) a common personality or demonstrative behavioural pattern, iv) the cohesiveness which holds the organisation together “glue”, iv) learnt patterns of behaviour, and v) the philosophical atmosphere which surrounds the individuals’ organisation.

#### *2.4.2. Organisation Culture Impact*

The 1990s, saw a marked increase in organisation culture research that was inspired by the growth in enterprise development, growing global business competitiveness, and technological dominance by Japanese companies (Deshpande et al. 1993). Deshpande et al.’s (1993) research, for example, identifies two organisation culture dimensions: i) internal maintenance and ii) organic. Internal Maintenance refers to the degree of business competitiveness while Organic refers to the degree of industrial spontaneity.

Deshpande et al. (1993) also identified four corporate culture types:

- i) Clans - organically determined cultures;
- ii) Adhocracies – innovative, entrepreneurial, creative-led cultures;
- iii) Hierarchies – stable and controlling cultures; and
- iv) Market – transaction- oriented cultures.

Research by Trompenaars and Hampden-Turner (1998), Kotter and Heskett (1992), and Denison and Mishra (1995) highlight the importance of leadership in identifying, shaping and managing organisation culture. Other notable studies on organisational culture include Trompenaars and Hampden-Turner’s (1998) focus on riding the “waves of culture” and emphasizes an understanding of the cross-cultural organisational impacts and multi-cultural layers of business influences.

In fulfilling the goal of identifying the existing dominant culture type within the sample organisation which will aid in management's change requirements, the Organisation Culture Assessment Instrument (OCAI) was developed by Cameron and Quinn (2011).

The OCAI instrument has been supported as a vehicle for identifying culture type and facilitating management/organisation change in a number of studies (see Suderman 2012; Heritage et al. 2014; Berkemeyer et al. 2015).

Organisation culture can also be linked to leadership styles. Several studies reported that organisation culture influences the level of transformational leadership activities of the senior management (Afsaneh 1993; Bunmi 2007; Sarros et al. 2008) and that this is a major influencer in decision-making behaviours (see Muhammad 2009).

#### *2.4.3. Organisation Culture and Burnout*

Several questions can arise that might connect work-related burnout and organisation culture. For example:

- i) Is there a relationship between an organisation's culture type and burnout?
- ii) Does workload and performance targets (as in the case of technology environment) contribute to burnout or emotional exhaustion?
- iii) Does a difference in the perception of what an organisation's dominant culture really is, have an impact on an individual's level of burnout or result in a more cynical attitude at work?

Dimitrios and Konstantinos (2014) specifically discuss the relationship between burnout and organisation culture, stating that, "the research and understanding of the syndrome are important, because failure to address leads to low efficiency of the employee ... in the influence of growth of the phenomenon contributes organisation culture" (Dimitrios and Konstantinos 2014, p.43). The authors suggest a link between the individual's perception of organisation culture and burnout, noting that, "job burnout may both affect and be affected by internal and external factors ... external factors may include the excessive workload, the pressure of the job, the organisational status/culture" (Dimitrios and Konstantinos 2014, p.46).

Other researchers lend support that burnout develops from socially-charged work environments and cultures (see Tepper et al. 2006; Restubog et al. 2011; Mawritz et al. 2014).

Maslach and Leiter (1997) identify six contributors to burnout, including workload, control, reward, community, fairness, and values. The ‘values’ component is directly related to the notion that organisation culture and burnout are related. In this context, values are defined as the ethical principles and beliefs held by the individual that conflicts with the requirements of the organisation and results in burnout. In their contribution to the impact of organisation culture and burnout to management, Zamini et al. (2011) state that “the culture of high-level management reflects managers’ beliefs, ideal desires while the culture of lower lines employees reveals the realities of work” (Zamini et al. 2011, p.1964). Zamini et al. (2011) also support the power influence that higher level senior management possess on lower level followers which can contribute to how they view the ‘culture’ from the ‘department’ level.

#### *2.4.4. Conservation of Resources and Organisation Culture*

Hobfoll (2001) suggested the association of organisation culture and COR theory as “integrating the individual-nested in family-nested in tribe, set in social context” (Hobfoll 2001, p.338). Reference to the in-family nested tribe is described as the perceptions and behavioural alternatives attached which are directed by the dictates of culture and describes the individual stressors experienced within a social context and or involves social consequences (see Hobfoll 2001).

Hobfoll (2001) also contends that the individual resource argument was not individually determined but was both transcultural and considered products of any given culture. Hobfoll (2001) offered that the research implications for practice were amplified by environmental (corporate culture) elements citing: i) psychological (emotional) work stressors, ii) abusive management practices, iii) work-load stress, and iv) the individual’s inability to cope with changing organisational outcomes.

Finally, Alvaro et al.'s (2010) study addresses the COR theory from the perspective of its impact on the organisational environment by stating that the "COR theory extends prior theories by acknowledging that stress stems from the combined effect of the subjective perception of an event as taxing or exceeding available resources and the objective or actual environmental circumstances that threaten or cause depletion of people's resources" (Alvaro et al. 2010, p.3).

#### *2.4.5. Caribbean Culture Research*

There are few Caribbean studies that reference both burnout and organisation culture. One of the more prominent research papers, Baba et al.'s (1999) study, examined occupational mental health among nurses within St. Vincent and Trinidad and Tobago. While mentioning overall organisation culture, and specifically measuring social support and role conflict, they report that "burnout was the sole predictor of depression which in turn predicted both absenteeism and turnover intention" (Baba et al. 1999, p.163).

Another reference to the influence of organisation culture by Trinidad and Tobago researchers was by La Guerre and Bissessar (2009) claiming that leadership style and organisation culture were integrated. Both researchers report that "any discussion of institutions or institution-building must also integrate a theory of leadership and culture since institutions function within the matrix of a cultural and social environment" (La Guerre and Bissessar 2009, p.125). Recommended by La Guerre and Bissessar (2009) was that institutional building must "involve a fundamental cultural transformation among the elites and masses alike" (La Guerre and Bissessar 2009, p.130).

#### *2.4.6. Summary on Organisational Culture*

The term organisation culture has many meanings and definitions. The literature establishes that organisation culture can significantly impact burnout (see Dimitrios and Konstantinos 2014) although there is less of an understanding as to how this link occurs.

The literature has also highlighted the symptomatic characteristics of a ‘burnout-contributing organisation’ as evidenced by high absenteeism levels, staff attrition, lower performance and productivity, and communicated intentions of separation (see Maslach 1988; Maslach et al. 2001; Taris et al. 2005; Tepper et al. 2006; Maslach 2011).

Similarly, the two Caribbean studies which examined burnout both suggested that it was the organisational climate which contributed to individual level burnout.

The literature also mentions the importance of community/social support (see Sookoo 2014) and of the importance of social network influences among senior managers (see Zamini et al. 2011) as key to influencing organisational culture types. The next section, 2.5, examines the impact of social networks, its definitions, and its impact on work-related burnout and how this present study aid managements in their decision-making ability.

## **2.5. Social Networks**

### *2.5.1. Introduction*

The aim of this section is to examine the impact that social network analysis brings to the present research study, its definition, and the impact that social networks has on burnout within Caribbean research. It is well-recognised that the proper communication amongst leaders within the organisation is paramount to achieving ultimate organisational success.

Growing interest on the effectiveness of leadership style, and the maintenance of organisation culture, are implicitly contingent on the social status of leaders, their individual influence within social groups and their ability to create positive work groups which foster general collaboration.

The study of the structural composition of networks, or the interacting relationships of leaders, employees, and other stake-holders, within an organisation, and its relationship with other organisational characteristics, has been growing in importance in recent years (Bass and Bass 2008; Thornton et al. 2011 and Brass 2012).

### 2.5.2. *Social Network Analysis Definition*

Similar to previous discussions, there is no singular definition of what constitutes a social network or social network analysis (see Cross et al. 2002 for a review). However, the terms ‘social network’ and ‘social network analysis’ have different meanings.

Social networks refer to relationships. For example, Brass and Labianca (2012) define a social network as, “a set of network nodes (example: individuals, groups, and organisations) and the set of ties representing some relationship or absence of relationship between the actors” (Brass and Labianca 2012, p. 247).

Similarly, Marin and Wellman (2014) describe a social network as “a set of nodes (or network members) that are tied by one or more types of relations” (Marin and Wellman, 2014, p.11). Fowler and Christakis (2008) write, “social networks consist of two elements individuals (nodes) and relationships (social ties) between them” (Fowler and Christakis 2008:4). Thus, the relationship between individuals or members (actors) drives the concept of a social network.

The study and measurement of social networks is called Social Network Analysis (SNA). Otte and Rousseau (2002) describe SNA “as a strategy for investigating social structures. (Otte and Rousseau 2002, p.441), while Blanchet and James (2012) define social network analysis as, “a distinctive set of methods for mapping, measuring and analysing social relations between people, groups and organisations” (Blanchet and James 2012, p. 438).

Kennedy (2010) considers SNA as, “the study of the structure and composition of networks that, in turn, is useful for understanding the implications of patterns and relationships among social entities” (Kennedy 2010, p.1). Giannakis (2012) defines SNA as, “a method that investigates the relationships between the social actors through analysis of the structure of the social network with the use of relational data” (Giannakis 2012, p.139).

Overall, the four elements that constitute SNA include: i) a set of network nodes or actors, ii) the study of the structural composition, iii) a study of the relationships, and iv) a finite set of social actions.



The growing popularity of SNA research is due, in part, to its graphical images (Blanchet and James 2012, p.439). SNA graphs can pinpoint, in visual form, the various relationships amongst the actors (for example: UCINET-NetDraw by Borgatti et al. 2002). This feature provides a better understanding of the existence of both the informal and formal relationships in an organisation.

### *2.5.3. Social Network Types*

Hoppe and Reinelt (2010) outline four distinctive types of social networks: i) Peer networks, ii) Organisational networks, iii) Field policing networks and iv) Collective networks.

These networks are described as follows:

**Peer Networks** - A system of social ties among leaders who are connected through shared interests and commitments, shared work, or shared experiences. Leaders in the network share information, provide advice and support, learn from one another, and occasionally collaborate. Peer leadership networks provide leaders with access to resources that they can trust.

**Organisational Networks** - A set of social ties that are structured to increase performance. These ties are often informal and exist outside the formal organisational structure such as when an employee seeks advice from a colleague other than their supervisor to help solve a problem more quickly. At other times, teams or communities of practice are intentionally created to bridge silos within organisations that interfere with performance, profit, or delivering on one's mission.

**Field Policing Networks** - A network connecting leaders who share common interests and who have a commitment to influencing a field of practice or policy. These networks seek to shape the environment (for example, the framing of an issue, underlying assumptions, and standards for what is expected).

Effective field-policy leadership networks make it easier for leaders to find common ground on the issues they care about, mobilise support, and influence policy and the allocation of resources.

**Collective Networks** - A self-organised system of social ties among people attracted to a common cause or focused on a shared goal. Network members exercise leadership locally. As the number of local groupings grows and there is increasing interaction, these groups begin to align and connect to form larger networks. These networks are often rooted in a sense of community and purpose; they may be driven by a desire to achieve a specific goal, or simply by the desire of each member to belong to something larger than oneself. The term *bridging* is also used to describe the vertical relationships infrequently established in non-personal communication.

#### 2.5.4. *Social Network Centrality*

Within the field of social networks, ‘centrality’ has become an important concept, and “one of the most studied concepts in network analysis” (Borgatti 2005, p.56). Fowler and Christakis (2008) describe ‘centrality’ as the “extent to which a node connects or lies between other nodes and hence its tendency to be positioned near the centre of his or her local network” (Fowler and Christakis 2008, p.4). Gomez et al. (2013) describe the ‘degree of centrality’ as “the number of links (edges) emanating from a node ... The degree of centrality focuses on the level of communication activity in terms of direct links from a node to its neighbours. The more ability to increase the number of direct communications, the higher the ‘centrality’ degree of a node” (Gomez et al. 2013, p.354).

Centrality within a social network is generally associated with importance or influence within the network (Fowler and Christakis 2008 and Martin et al. 2014). There are several methods to measure ‘centrality’ that will be discussed in Chapter 3.

#### *2.5.5. Burnout and Social Network Support*

This section reviews prior research examining the relationship between burnout and social networks. As previously mentioned, Maslach and Leiter (1997) identify six contributors to burnout, including workload, control, reward, community, fairness, and values. The ‘community’ component, which involves the social network connections of individuals within the workplace and community by isolating impersonal relationships, suggests that network position and burnout are related.

In addition, Maslach et al. (2001) refer to the ‘buffering hypothesis’ to describe the relational impacts between the individual and burnout job stressors (see Llorens et al. 2006 and Grant and Sonnentag 2010). The buffering hypothesis suggests that high levels of social support provide a buffer to the negative effects of a potentially stressful event. This buffering can take several forms, such as close friends offering resources (which ties the buffering hypotheses to the COR perspective on burnout) or lessening the intensity of a negative reaction. The research also implies that people with little or no participation and input in the decision-making process are less likely to exhibit higher burnout levels.

Several studies have examined this ‘buffering hypothesis’ in a variety of situations. The impact of a lack of social network support (community) and its direct implication to burnout has been highlighted by Esnard and Mohammed (2014). They state that, “perceived social support from friends and family and significant others, play a role in their depressive symptomatology” (Esnard and Mohammed 2014, p.21).

Jawahar et al. (2012) also argue that perceived individual organisational support is a reducer for job stressors by stating that “considerable research has focused on social support as a means of reducing the harmful effect of stressors. In general, when people feel they have social support from others, they report less psychological distress or strain” (Jawahar et al. 2012, p.147). Thus, the authors hypothesise that perceived organisation support would, “be negatively related to emotional exhaustion, depersonalisation and reduced personal accomplishment” (Jawahar et al. 2012, p.148).

In identifying the job characteristics of burnout which impact emotional and physical resources, Maslach et al. (2001) suggest: i) packed work-day schedules (time constraint exhaustion actors), ii) qualitative job demands based on role conflict (conflicting work demands to be met) or role ambiguity (non-clearly defined roles and targets), iii) links to customer-related service targets, and iv) the lack of social support from supervisors and co-workers. The job characteristics listed above can all be explained under the COR theory since all these aspects involve emotional or physical resource use by the employee, which can produce even higher burnout levels.

Other researchers have noted a connection between social network position and work-related burnout. Moynihan and Pandey (2007), for example state, “that employees exist in social networks inside and outside their organisation, and these networks shape employee attitudes and behaviour. (Moynihan and Pandey 2007, p.205).

Michinov (2005) notes that, “one of the important social factors related to occupational burnout, health complaints, and job satisfaction is thought to be self-comparison with others” (Michinov 2005, p.101).

#### 2.5.6. *Social Networks, Culture and the Conservation of Resources Theory*

Several researchers have suggested that network interactions create and/or limit access to various organisational resources (Cooke et al. 2005; Casson and Della Giusta 2007; Lee and Jones 2008). As previously mentioned, the idea of network interactions being tied to emotional, financial, and physical resource availability and use fits directly with the Conservation of Resource (COR) model discussed earlier.

Through this relationship it follows that certain types of network relationships can contribute to, or reduce, employee engagement and burnout depending on the resources accessed and used by the network participant or member. Lee and Jones (2008) describe these relationships as *bonding relationships* (see also Spence et al. 2003 and Anderson et al. 2007).

In further exploring the impact of social network relationships and burnout under the COR model, Halbesleben (2006) states that “the COR model has specific implications for the relationship between social support and burnout ... Among those were work-related social resources such as support from co-workers and understanding from my employers/boss” (Halbesleben 2006, p.1134). The author contends that “when one considers the interaction between different sources of social support and dimensions of burnout, it appears that work sources of support, because of their more direct influence on work demands are more strongly related to exhaustion while non-work-related sources of support are more strongly related to depersonalisation and personal accomplishment” (Halbesleben 2006, p.1138).

The development of individual coping strategies is sometimes referred to as ‘reverse buffering’ which suggests that when social support from co-workers is low, it directly leads to higher work strain (see Halbesleben 2006). Other researchers, such as Griggs et al. (2013) highlight the importance of social network support in addressing the loss of resources associated with the Conservation of Resources theory (Hobfoll 1989).

This notion of social support is important in understanding the relationship between burnout and social networks. For example, Karatepe (2010) defines social network support as “an interpersonal transaction that involves emotional concern, instrumental aid, information or appraisal can surface from co-workers and supervisors in the workplace. Social support in the workplace may help employees to cope with difficulties associated with work and family roles” (Karatepe 2010, p.837).

The importance of the social interactions amongst employees within the organisation was also highlighted in Salanova et al.’s (2010) research. In their research, the authors refer to the term ‘resource caravans’. Salanova et al. (2010) state that “According to COR theory, this accumulation and linking of resources create resource caravans. That is, resources tend not to exist in isolation ... COR theory predicts that in the long run such resource caravans result in positive personal outcomes like better-coping adaptation and well-being” (Salanova et al. 2010, p.120). Thus, much of research that connect social networks to burnout within work environments assume the potential support within a social network acts as a buffer against burnout.

However, it is interesting to note that there is little discussion in the literature about isolation within a network as a potential coping strategy -- that is, purposely removing oneself from the potential stressors that might arise from work-related interactions. Thus, a central network position in an organisation may have both positive and negative connections with burnout.

#### *2.5.7. SNA Research in the Caribbean*

A review of the literature indicated that there were no Caribbean-based studies that directly examined social networks and their relationship with other elements of organisation life or performance. Baba et al.'s (1999) study touches on the topic and provides some evidence that an association exists between social networks, however, this was not an empirically based SNA study.

### **2.6. Chapter 2: Summary**

The Literature Review explored each of the research components which impact work-related burnout (transformation leadership, organisation culture and social networks). The literature undertook the approach by carefully examining: i) the definition of the terms leadership-transformational, ii) organisation culture and iii) social networks. Discussed also were the instruments of choice and the literary support for their use pertaining to the research case study.

From a literature perspective, the hypotheses arising from the research questions highlighted in Chapter 1 from each concept were raised which will be later synthesized into a finalised predictive model (the sum of all the hypotheses) in Chapter 3.

## **Chapter 3: Hypotheses and Structural Equation Model**

### **3.1. Gaps in the Literature**

The underlying approach to the present research was to examine the existence of the relationships between three important drivers of work-related burnout - leadership styles, organisation culture, and social network relationships, and how these factors interact with each other to impact work-related burnout. While, each of these three components has produced large amounts of empirically-published studies, there does not appear to be any significant literature indicating an examination of more than two relationships between each other, and more specifically their impact in combination with each other on work-related burnout and an individual's perception of performance.

Research studies that examine the bivariate relationship of individual drivers of work-related burnout such as leadership style, organisation culture, or position in social network, to burnout are somewhat common in the literature. For example, as discussed in Chapter 2, early studies by Maslach et al. (2001) and Frost (2004) provided significant empirical insight into the relationship between burnout research and leadership style. Correspondingly, support for an association between burnout and leadership style effectiveness has also been provided by Zopiatis and Constanti (2010) and Gill et al. (2006).

Similarly, there is a broad research literature that examines the impact of organisation culture on burnout. In general, these studies suggest that different organisation cultures can contribute significantly to employee burnout. For example, emotionally-charged environments can lead to higher levels of employee burnout and stress, as well as a number of associated problems such as absenteeism, expressions of separation and staff attrition (see Tepper et al. 2006; Restubog et al. 2011; Mawritz et al. 2014). Recent research also indicates that the lack of perceived organisational support can lead to higher levels of employee emotional exhaustion and depersonalisation (see Dimitrios and Konstantinos 2014; Sookoo 2014).

Finally, there is an expanding literature that examines social network and communication influences on burnout. Social network centrality, that is, the individuals' position within the network and their ability/ease of accessing the communication network seems particularly important. The literature indicates that social network centrality is important to for network power, while social network community support is key to preventing ostracisms and feelings of depersonalisation. Studies also appear to indicate that the distance from the senior manager within a work environment is significantly related to the burnout dimensions of exhaustion and depersonalisation (supported by Maslach et al. 2001; Oshagbemi and Gill 2003; Gill et al. 2006; Sookoo 2014).

While these studies have laid the foundation for the present research, there are clearly two important gaps in the literature that have been discussed:

- i) Literature Gap 1: There are no known empirical research studies investigating the relationship between all four components of burnout, individual preferred leaderships, perceptions of organisation culture, and social network centrality in combination, and
- ii) Literature Gap 2: There is a general scarcity in scholarly Caribbean research which examines burnout, particularly in relationship to other constructs such as social network centrality, leaderships, and organisational culture.

Based upon these gaps in the literature, a number of research questions and associated hypotheses have been developed.

### **3.2. Research Questions and Hypotheses**

The research questions and related hypotheses that guide the present study are identified as follows:

#### *3.2.1. The Burnout to Performance Link*

**RQ1:** *What is the relationship between the various dimensions of managers' work-related burnout and their perceptions of departmental and personal performance?*



The first research question examines the work-related burnout and performance link. The literature on work-related burnout generally indicates that the primary dimension of burnout is emotional exhaustion, and that the level of emotional exhaustion then influences the level of the other burnout dimensions, particularly cynicism (see Hobfoll 1989; Alarcon 2011).

Prior research also indicates that higher levels of both emotional exhaustion and cynicism often result in lower levels of both personal and organisation performance. Gill et al. (2006) and Zopiatis and Constanti (2010) for example, report that burnout and organisation performance measures are correlated, albeit weakly. While Gill's et al. (2006) found some support for the burnout to performance link, they also suggest that the element of 'performance' has not been clearly defined in many studies (industry, goals and set standards; objective measures versus perception, etc.). This confusion about how to define 'performance' is a possible explanation of the inconclusive results found in some burnout studies (see Kwag and Kim 2009). Despite mixed findings when using broader measures of organisational performance, such as profitability, there seems to be greater evidence regarding the impact of burnout on more personal measures of performance, such as personal motivation, perception of personal abilities and work-place efficacy, absenteeism, and work separation (see Bakker and Heuven 2006).

This leads to the hypotheses associated with the first research question:

1H<sub>1</sub>: - Higher levels of emotional exhaustion are associated with higher levels of cynicism

1H<sub>2</sub>: - Higher levels of emotional exhaustion are associated with lower levels of a manager's perception of professional personal efficacy

1H<sub>3</sub>: - Higher levels of cynicism is associated with lower levels of a manager's perception of professional personal efficacy

1H<sub>4</sub>: - Higher levels of emotional exhaustion is associated with lower levels of an individual's perception of department performance and

1H<sub>5</sub>: - Higher levels of cynicism is associated with lower levels of an individual's perception of department performance.

### 3.2.2. The Leadership Style to Burnout Link

**RQ2:** *What is the relationship between a manager's personal style of leadership (transformational) and work-related burnout?*

The second research question examines the relationship between leadership style and work-related burnout. From a Conservation of Resources (COR) perspective, the greater the emotional, financial, or physical resources that need to be used by a manager within a work situation, the greater the potential for work-related burnout, particularly along the emotional exhaustion dimension (Alarcon 2011). It is within this perspective that a manager's particular leadership style may impact his or her level of burnout. For example, a particular leadership style or behaviour exhibited by the CEO, or the highest senior management team, in an organisation creates behavioural expectations for other subordinate managers within the organisation. If a subordinate manager has a personal leadership style that is fundamentally different from the senior management's leadership style it may require a greater expenditure of personal resources by the subordinate manager to either adopt a different leadership orientation or cope with the potential frustration of working within that specific organisation.

Of the various leadership components discussed in Chapter 2, the notion of transformational leadership, and more specifically the dimension of "inspirational leadership" appears particularly relevant to this issue. Inspiration leadership implies the ability to energise the organisation and communicate the mission and vision with passion. To accomplish this, the components of inspirational leadership typically involve more direct and personal interactions with others in the organisation thus increasing the potential for greater personal resource expenditures by interacting parties. Under the Conservation of Resources perspective, this higher level of resource expenditure by a manager with dissimilar leadership styles from the CEO (or senior management team) should result in higher levels of work-related burnout, particularly emotional exhaustion.

For example, both Tepper et al. (2006) and Byrne et al. (2013) argue that abusive leadership (the absence of transformational leadership) can contribute to work-related burnout. Byrne et al. (2014) is one of the few research studies which associates transformational leadership to burnout under a Conservation of Resource framework. This leads to the following hypothesis.

2H<sub>1</sub>: Greater differences between a manager's personal leadership style and the leadership style of the senior management are associated with higher levels of emotional exhaustion.

### *3.2.3. The Leadership to Workplace Social Relationship Link*

**RQ3:** *What is the relationship between managers' differences in personal leadership styles and their position in the organisation's social network?*

The third research question examines the link between the social relationships which exist within the organisation (social network) and a manager's leadership style. This relationship, can also be placed within the Conservation of Resource model. Several hypothesised relationships regarding a manager's position in the organisation's social network are suggested. Coping strategies, for example, are a key concept within the Conservation of Resource model. Coping represents a strategy that is used to either reduce the need for resource expenditures overall, or to expend certain types of personal resources to reduce the expenditures of other, perhaps more critical types of personal resources.

With respect to differences in leadership styles, under the Conservation of Resource model, employees that possess a personal leadership style that is different from their senior management's leadership style may need to develop coping strategies to reduce their expenditure of personal resources resulting from potential friction. One possible coping strategy is to simply withdraw from the organisation's work-related social network to conserve, or reduce, the need to use emotional resources required to interact with senior managers with different leadership styles. In their examination of workplace burnout under the Conservation of Resources framework, Ito and Brotheridge (2003) refer to this withdrawal process as one of two possible "passive" coping strategies (the other being emotional 'resignation').

In other words, less contact with dissimilar supervisors may reduce frustration, and thus the expenditure of personal and emotional resources. This withdrawal argument under the Conservation of Resources framework leads to the first two hypotheses under the third research question.

3H<sub>1</sub>: Greater differences between a manager's personal leadership style and the leadership style of senior management leads to lower levels of centrality within the organisation's management social network.

3H<sub>2</sub>: Greater differences between a manager's personal leadership style and the leadership style of senior management leads to lower levels of centrality within the organisation's operations social network.

In addition, by its very nature, higher centrality within the work-related network that involves frequent, daily communication at the operational (non-managerial) and technical level implies a high daily workload obligation. Under the Conservation of Resource model, the increased workload that comes from greater centrality in operations-related activities should lead to a greater expenditure of personal resources, and thus increased levels of stress and burnout. This workload argument leads to the third hypothesis under the third research question.

3H<sub>3</sub>: Higher centrality in the operations or technical-related communication network is associated with higher levels of emotional exhaustion.

Managerial or strategy-level decision-making centrality, however, should have a different impact on burnout from the more operational/technical level workload obligations. Social network theory suggests that a manager's centrality within the managerial or strategy decision-making communication network leads to organisational power. Under the Conservation of Resource model, organisational power can reduce the need to expend personal resources for several reasons. Power within a management network implies greater control over personal resource expenditures since the more powerful managers can alter work relationships, give "orders" to their advantage, influence communication, and develop other strategies that shift the expenditure of personal resources to other, less powerful individuals within the network. Prior research indicates, for example, that social support distances from the manager/boss are significantly related to the burnout dimensions of exhaustion and depersonalisation (Maslach et al. 2001; Oshagbemi and Gill 2003; Gill et al. 2006; Sookoo 2014). Since managerial power implies reduced personal resource use, it therefore should result in less stress and burnout. This power argument leads to the fourth hypothesis:

**3H<sub>4</sub>:** Higher centrality in the management/strategy communication network is associated with lower levels of emotional exhaustion.

#### *3.2.4. The Social Network Relation to Perception of Organisation Culture Link*

**RQ4:** *What is the relationship between managers' positions in the social network and their perception of the organisation's culture?*

The fourth research question examines the relationship between organisation culture and the work-related social relationships. A manager's perception of organisation culture is influenced by his or her interactions within that organisation. A person's perception of the true 'dominant' organisation culture requires broad contact and interactions within the organisation.

By, definition, broad contact comes with social network centrality, while individuals on the periphery of the organisation's network have much more limited contacts and are less likely to understand the organisation's overall or dominant culture. Managers with less centrality in the overall social network are likely have greater differences and diversity in their perception of the 'dominant' organisation culture than those with more central positions. Since the number of contacts within an organisation can come from centrality in either the decision-making network or the daily, operations-related network, this research question results in two hypotheses:

**4H<sub>1</sub>:** Higher centrality in the management communication network is associated with less diversity in perception of "dominant" organisation culture.

**4H<sub>2</sub>:** Higher centrality in the daily, operations-related communication network is associated with less diversity in perception of "dominant" organisation culture.

In examining the construct of organisation cultures, and its impact on burnout, the literature tends to support that certain types of organisation cultures can contribute to the emotional exhaustion dimension of burnout (see Alarcon, 2011; Dimitrios and Konstantinos 2014). For example, there is abundant evidence that high or emotionally-charged environments lead to high employee exhaustion, absenteeism, expressions of separation and ultimately staff attrition (see Baba et al. 1999; Tepper et al. 2006; Restubog et al. 2011; Mawritz et al. 2014). However, within the Conservation of Resources model the dimension of cynicism can also be explored.

Many coping strategies have been proposed under the Conservation of Resource model. While some coping strategies are active in nature, emotional “resignation” is often considered a “passive” coping strategy. (e.g., Ito and Brotheridge, 2003). A manager that views the organisation culture as different from the majority of other managers (normally defined as the dominant culture), is likely to become more cynical in nature, that is developing a more impersonal and distant attitude (similar to an emotional resignation coping strategy), particularly since a more active coping strategy (such as convincing the majority about the “true” culture) is unlikely to be effective and would require a large investment of personal resources. This leads to an additional hypothesis that ties differences in the perception of organisation culture to the cynicism dimension of burnout.

4H<sub>3</sub>: Greater diversity in perception of “dominant” organisation culture is associated with higher levels of cynicism.

### *3.2.5. The Work-Related Social Network and Friendship Social Network Link*

**RQ5:** *What is the relationship between managers’ social network work-related centrality relationships (management decision- making and daily operations) and their friendship relationships?*

Friendships are often seen as a vehicle to mitigate work-related stress and burnout. The fifth, and final, research question explores the relationship between friendship networks and work-related networks. For example, a person's position within the work-related social or communication network may extend beyond the work environment, particularly since work-related centrality may also be associated with similar perceptions of organisation culture and similar styles of leadership as previously hypothesised. This leads to the following that links the friendship network to the work-related network.

5H<sub>1</sub>: Higher centrality in the management work-related social network is associated with higher centrality in the friendship network.

5H<sub>2</sub>: Higher centrality in the operations work-related social network is associated with higher centrality in the friendship network.

### **3.3. The Model**

As previously discussed, the foundation of the present research is to examine the impact of leadership style, organisational culture, and social relationships have upon work-related burnout, and thus performance in an integrated manner. This has resulted in five research questions and a number of hypotheses. Since, several 'causal relationships' are suggested in the hypotheses, the research employs a structural equation modelling (SEM) approach. Table 1 provides a summary of the various hypotheses.

*Table 1- Summary of Hypotheses to be examined*

<u>Hypotheses</u>	<u>Hypothesised Direction</u>
1H <sub>1</sub> : Emotional Exhaustion → Cynicism	Positive
1H <sub>2</sub> : Emotional Exhaustion → Efficacy	Negative
1H <sub>3</sub> : Cynicism → Efficacy	Negative
1H <sub>4</sub> : Emotional Exhaustion → Dept. Performance	Negative
1H <sub>5</sub> : Cynicism → Dept. Performance	Negative
2H <sub>1</sub> : Difference Leadership Style → Emotional Exhaustion	Positive
3H <sub>1</sub> : Difference Leadership Style → Management Centrality	Negative
3H <sub>2</sub> : Difference Leadership Style → Operations Centrality	Negative
3H <sub>3</sub> : Operations Centrality → Emotional Exhaustion	Positive
3H <sub>4</sub> : Management Centrality → Emotional Exhaustion	Negative
4H <sub>1</sub> : Management Centrality → Diff. Perception Dominant Culture	Positive
4H <sub>2</sub> : Operations Centrality → Diff. Perception Dominant Culture	Negative
4H <sub>3</sub> : Diff Perception Dominant Culture → Cynicism	Positive
5H <sub>1</sub> : Operations Centrality → Friendship Centrality	Positive
5H <sub>2</sub> : Management Centrality → Friendship Centrality	Positive

Figure 1 summarises the overall model with a path diagram showing the various hypotheses to be tested within the structural equation model. In the diagram, the hypotheses are identified along the appropriate path in the model as well as the hypothesised relationship (positive or negative).



## Steps in Research Process (PLS-SEM)

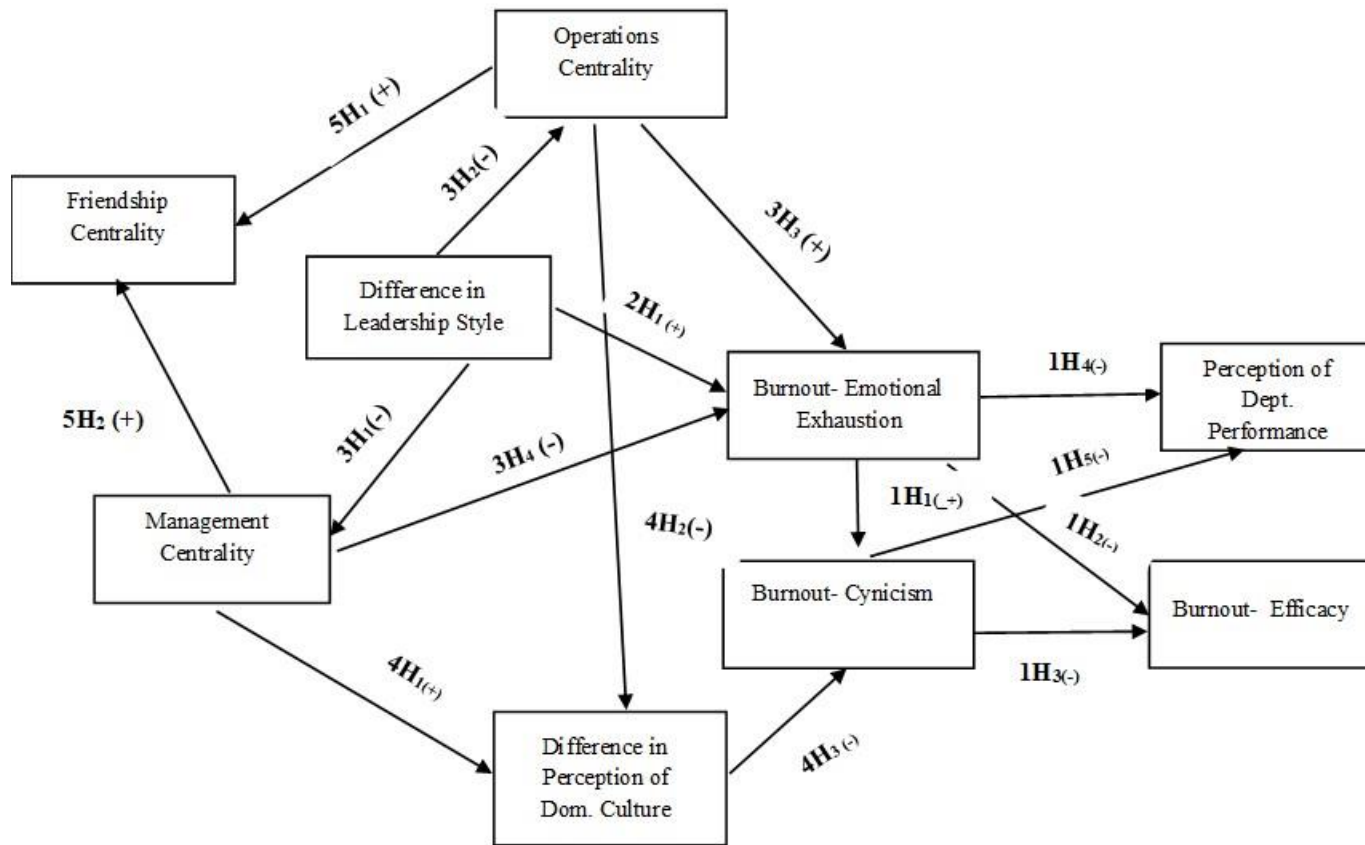


Figure 1- Structural Model and Hypotheses

To examine the research questions and test the hypotheses, the present research adopted a Structural Equation Modelling (SEM) approach using the SmartPLS Structural Equation Modelling software (Carrascal et al. 2009; Hair et al. 2014).

### **3.4. Use of Path Analysis**

Structural Equation Modelling, or SEM, represents a family of techniques that is used to analyse and model structural relationships between variables. This study used a “Path Analysis” approach to SEM. The Path Analysis assumes uni-dimensionality in the variables, and is, in essence, an extension of multiple regression. Path Analysis can therefore be considered a special case of Structural Equation Modelling when only single indicators or measures are employed within the casual model.

In, essence, Path Analysis has an assumption that the variables in the model are “observed”. The assumption in more complex or “confirmatory” SEM is that the true variables are “unobserved” or “latent”, and that for each of the unobserved latent variables there is a combination of observed or measured variables. In these SEM procedures, the estimation then includes a factor analysis which estimates the relationship between the observed or measured variables and the latent variable, and then a regression which estimates the coefficients between the structural model (path model) between the latent variables (see Henseler et al. 2016, pp.5-7; Samini 2016).

Given that 6 of the 9 variables used in the model are single-item or transformed measures, and the remaining 3 variables use the MBI-GS scales of emotional exhaustion, cynicism and efficacy that have both high validity in academic research and are commonly used in actual managerial situations and practice as single measures (computed as a composite of the various items for each of the three burnout dimensions), it was decided that a Path Analysis approach using single item measures was the most appropriate to the present study (see Diamantopoulos et al. 2012). In addition, the issue of estimating SEM coefficients with single item measures influences this researcher’s choice in the selection of PLS-SEM, which accommodates single item measures better than CB-SEM.

### 3.4.1. *SEM and the Testing of Hypothesised Path Models*

SEM allows the testing of hypothesised path models. The model is made up of two elements: i) a structural or inner model which describes the relationships between the latent variables, and ii) measurement models which describe the relationship between the latent variables and their measures, referred to as the indicators. The structural component of the path diagram's inner model is based on theory, logic, hypotheses, or practical experiences observed by the researcher. That is the case in the present research, and as mentioned above the present research uses a 'Path Analysis' approach, where the measurement model is defined and not estimated. The sequence of the model is often displayed from left to right with independent constructs on the left (exogenous variables) and the other variables to the right (endogenous variables). Graphically, exogenous variables are the constructs which only have arrows that point out from them and never have arrows which point into them. In Figure 1, (an exogenous variable) or sometimes referenced as an independent variable is 'Difference in Leadership style'. Whereas, endogenous variables have arrows which point into them. Also, in Figure 1, examples of endogenous variables are: i) Difference in perception of department performance, ii) Friendship Centrality and iii) Burnout-Efficacy.

Constructs which operate as both independent and dependent variables are considered endogenous as well in a model and are often located in the middle of the diagram. An example of this from the diagram will be: i) Burnout-Emotional Exhaustion.

The use of Structural Equation Modelling (SEM) has enabled academic research in behavioural sciences, management studies and social sciences to model complex relationships with a computational model. Hair et al. (2014: xi) mentions "Structural Equation Modelling as among the most useful advanced statistical analysis techniques that has emerged in the social sciences in recent decades".

### 3.4.2. *Moderating and Mediating Variables*

In the path model shown in Figure 1, there are some indirect effects hypothesised. An indirect effect is when another variable (endogenous) lies between two other variables, whereas a direct effect is when two variables are connected without any other variable in between. An indirect effect can also be considered a mediation effect. Examples of the indirect/mediating effects are: i) Burnout- Emotional Exhaustion and Burnout-Cynicism ii) Difference in Leadership style, iii) Centrality-Management, Operational, Friendship and iv) Difference in perception of Dominant Culture. However, the model used in this study does not include any moderating variables. A moderating variable is something that changes the effect of a direct relationship. Moderation is essentially an interaction effect (see Hair et al. 2014, p.15; Samini 2016).

One moderating variable that was originally considered for this study was gender. In, essence, there might be an argument that gender would moderate the various relationships leading into emotional exhaustion. For example, males (or females) may show differences in the relationships leading to emotional exhaustion. Similarly, males (or females) may use different coping strategies to conserve resources. Unfortunately, the sample used in this study had only one female, thus it was impossible to use gender as a moderating variable. No other moderating variable was considered.

### 3.4.3. *The Choice of SEM by Other Researchers*

The choice of the analytical approach for this research has been guided by other researchers who similarly adopted SEM in empirical studies under the Conservation of Resources theoretical framework (see Rod and Ashill 2009). The choice of research methodology in adopting the use of SEM versus other methods of quantitative analysis was influenced by numerous researchers (Nachtigall et al. 2003; Carrascal et al. 2009; Akter et al. 2011b; Alavifar et al. 2012; Goodhue et al. 2012; Wong 2013; Hair et al. 2014; Lowry and Gaskin 2014; Chen et al. 2015; Fai et al. 2016). Lowry and Gaskin (2014), for example, articulate various advantages that SEM holds over other methodologies such as regression, ANOVA, and t-tests, for the type of data examined in the present research.

Statistical techniques such as regression, ANOVA, and t-tests, are often referred to as 1<sup>st</sup> generation statistical techniques (see Lowry and Gaskin for a direct comparison of 1<sup>st</sup> generation statistical techniques and SEM).

### **3.5. Use of single item measures in SEM**

As previously discussed, oftentimes SEM involves multiple observed variables which are then used to estimate a non-observed, latent variable. However, this study uses the computed burnout scale/sub-scale values as the latent variables. These values are calculated as the average of the individual questions for each of the scales/sub-scales of work-related burnout (MBI-GS), leadership style (MLQ-5x), and organisation culture (OCAI). In addition, the UCINET Freeman's centrality measure is also used as a latent variable. The use of well-established scales as single-item measures in SEM is considered acceptable under four broad conditions (Hair et al. 2014, p.48; see also Diamantopoulos et al. 2012):

- i) relatively small samples sizes, such as under 50,
- ii) path coefficients which are generally low, often under 0.30,
- iii) the items within the single-item measure represent a scale with highly correlated items with a high Cronbach Alpha and
- iv) the items are semantically redundant.

These conditions are generally satisfied by the present study. The sample size in the present study is thirty-two; preliminary analysis indicates generally low or medium level, but statistically significant, path coefficients. In addition, although many authors suggest a Cronbach Alpha of >0.70 (0.60 is sometimes considered acceptable for general scale reliability in early stage research) to satisfy conditions iii and iv above, the present study only use sub-scales in the Structural Equation Modelling that have an estimated Cronbach Alphas >0.75.

### **3.6. PLS-SEM and Other Statistical Techniques**

SEM involves testing hypothesised model to determine the relationship between variables. The path relationship is generally determined by an expected or theoretically determined relationship between variables.

While, there are a number of statistical methodologies, such as regression and ANOVA that can test relationships between variables, SEM has advantages over these other methods when there are: i) combinations of direct and indirect relationships within the model, ii) there is more than one “dependent variable” within the model, and iii) there is sense of causality between the variables that is suggested by an underlying theory. Regression and path analysis are, in fact, closely related. Depending on the software program being used, estimation of the path coefficients typically utilises a regression methodology, however, SEM is better able to decompose the sources of the correlations between the various variables, and thus determine the direct and indirect relationships within a path diagram.

Generally, other statistical techniques like regression analyses, MANOVA and ANOVA have been categorised as 1<sup>st</sup> generation techniques in favor of more sophisticated computerised structural equation models for examining complex models as presented in this study (see Lowry and Gaskin 2014).

#### 3.6.1. *Structural Regression Model*

Since the final model proposes several direct relationships between “predictive” variables and emotional exhaustion, a regression analysis (OLS) is performed to confirm these specific relationships within that part of the final structural equation model. However, due to the complexity of the full model, and advantages of PLS-SEM (normality and linearity assumptions are more relaxed, see Natchitgall et al. 2003; Alavifar et al. 2012), regression analysis was therefore not considered appropriate for the final full model estimation.

#### 3.6.2. *Use of Correlations and Co-efficient of Determination*

Use of correlations were adopted in this research to determine the relationships between the constructs. The research utilises PLS-SEM to estimate path coefficients and the statistical significance of the path coefficients.

This research uses Pearson’s coefficients see (Chapter 5).

### 3.6.3. ANOVA and MANOVA

MANOVA is described as a statistical technique which tests the difference in two or more vectors of means (see French et al. 2008). Whereas, ANOVA is used to examine the group means of two or more subjects normally within an experiment. The use of ANOVA and MANOVA has been best recommended for cases of experimental situations where some of the independent variables are manipulated, and where there are categorical elements in the data that allows for a statistical comparison of the means of a test variable between the different categories. The data used in the present study are more “continuous-like” in nature, with no categorical data or experimental manipulation. Hence ANOVA or MANOVA statistical techniques were not adopted for the present study.

### 3.6.4. Confirmatory Factor Analysis (CFA Model)

A CFA model allows the researcher to test the hypothesis that a relationship between the observed variables and their underlying latent construct(s) exists. In addition, as previously mentioned six of the nine variables are single measures, with the three remaining “burnout” variables using well established, and reliable scales

Use of confirmatory factor analysis model is impacted by sample size, measurement instruments, multi-variate normality, outliers, missing data, interpretation of model indices, and model-fit interpretation. Given the fact that the sample size in the present research is 32 and the data is not assumed to be normally distributed the adoption of CFA model was ruled out as model of choice for this research.

### 3.6.5. The Latent Curve Model

The LCM is a type of structural equation modelling (SEM) which is applied to repeated measures of longitudinal data where  $Y$  has been measured from time  $t = 0$  to  $t = T$  on  $i = 1, \dots, N$  individuals (see Ghisletta and McArdle 2012). The model presumes that  $Y$  is contingent only upon  $t$  as in

$$Y_{i,t} = \beta_{0,i} + \beta_{1,i} \times t_{i,t} + \varepsilon_{i,t} \quad (1)$$

where  $\varepsilon_{i,t}$  is the error component varying in time and across individuals. The underlying assumptions are that

$$\beta_{0,i} \sim N(\gamma_0, \tau_{00}) \quad \beta_{1,i} \sim N(\gamma_1, \tau_{11}) \quad \varepsilon_{i,t} \sim N(0, \sigma^2) \quad (2)$$

meaning that  $\beta_{0,i}$ ,  $\beta_{1,i}$ , and  $\varepsilon_{i,t}$  are normally distributed, with mean  $\gamma_0$ ,  $\gamma_1$ , and 0 and variance,  $\tau_{00}$ ,  $\tau_{11}$  and  $\sigma^2$ , respectively. Ghisletta and McArdle (2012) suggest that the model also allows for the covariance  $cov(\beta_{0,i}, \beta_{1,i}) = \tau_{01}$  and that the model is adequate for data which is structured on two levels where repeated measures varying across time are nested within individuals. “Under multivariate normality the LCM is equivalent to the multilevel, hierarchical, random effects, and mixed effects models, where the parameters representing sample averages ( $\gamma_0$  and  $\gamma_1$ ) are also called fixed effects, while individual deviations from the sample averages (represented by  $\tau_{00}$ ,  $\tau_{11}$ ,  $\tau_{01}$  and  $\sigma^2$ ) are called random effects” (Ghisletta and McArdle 2012, p.3). Given the nature of the data (non-longitudinal, etc.) for this study, the LCM was not used.

### 3.7. Arguments in favour of SEM versus other models

#### i) Complexity of Applications

“First generation” techniques, such as regression and ANOVA, are very powerful if a number of assumptions are met. In regression analysis, for example, there are numerous assumptions that must be met, such as error normality assumptions. 1<sup>st</sup> generation techniques are also generally ill-suited to modelling, particularly if the model relationships are hypothesised in a causal or complex manner.



In addition, 1<sup>st</sup> generation techniques become complicated when attempting to model latent variables. For these reasons, this research employs an SEM approach for the final analysis.

ii) Popularity of SEM use in research

The most widely applied SEM method is covariance-based SEM (CB-SEM) such as LISREL (Borgatti et al. 2009) and AMOS (Arbuckle 2006). An alternative SEM method, the partial least squares method or PLS-SEM, is becoming increasingly popular since it has far fewer underlying assumptions than CB-SEM (Carrascal et al. 2009; Hair et al. 2014;). The most popular PLS-SEM program is SmartPLS 3.1. This research uses the SmartPLS 3.1 program.

iii) Going beyond rejecting or accepting the hypothesis

One important application of SEM is to empirically confirm or reject hypothesised relationships. The use of PLS-SEM (Hair et al. 2014, pp.1-2) is referred to as a second-generation application of structural equation analysis. PLS-SEM is used to explain the variance in the dependent variables within the path model. In addition, PLS-SEM is particularly useful in developing predictive models of behaviour (Carrion et al. 2016).

### **3.8. The Advantages of PLS-SEM**

The choice in adopting a PLS-SEM approach for this research is based on the following factors:

- i) In cases where the underlying theory is not well developed (such as in this study, since no prior studies have examined the four dimensions together using a Conservation of Resources approach), the use of PLS-SEM is recommended rather than CB-SEM, especially if the primary objective is to predict or explain target constructs (such as burnout in the present study) (Hair et al. 2014, p.14):
- ii) Since the estimation procedure for PLS-SEM is basic least squares (OLS) regression rather than the Maximum Likelihood (ML) procedures of CB-SEM, PLS-SEM, it is more appropriate when the objective is explanatory and theory development (Hair et al. 2014, pp.14-15).

- iii) PLS-SEM works efficiently with small sample sizes and complex data (Hair et al. 2014, p.15, pp.18-20). To ensure sufficient “power” for statistical analysis a “10-times” rule is often cited for small samples, which means that the sample size should be 10-times the “the largest number of structural paths directed at a particular construct in the structural model” (Hair et al. 2014, p.20).

The sample size in this research is 32, which means only 3 paths should be directed toward a particular construct. It should be noted that while the “10-times” rule is only a general guideline for statistical power considerations, this “10-times” rule is followed in the present study.

- iv) PLS-SEM works well with single item data (Hair et al. 2014, p.15). The present research uses the established scales for measuring work-related burnout, leadership styles, perception of organisation culture, and perception of department performance. This study then uses the single scale value (typically, the average of the individual questions within the scale or sub-scale) as the input to the SEM. In addition, Freeman’s centrality measure from UCINET is a single item measure.
- v) PLS-SEM uses a non-parametric process for statistical testing so there are no normality distributional assumptions as in CB-SEM. The determination of statistical significance is based upon an iterative “bootstrapping” method (Hair et al. 2014, pp.16-17). This research uses both multi-item scales (which results in response variability) and the transformations of variables to determine ‘delta’ or ‘difference’ measures, which makes it very difficult to assume a multivariate normal distribution.

#### *3.8.1. The Growing Choice of PLS-SEM by Researchers*

The choice of PLS-SEM has been steadily growing within the last five years in international and academic business research (see Richter et al. 2016). Additionally, with the rise of the PLS-SEM methodology, several articles have appeared which critically compare the two analytical approaches to SEM. For example, Lowry and Gaskin (2014) provide a comparison of the advantages and disadvantages of PLS-SEM and co-variance based SEM.

The authors note that PLS-SEM is preferred over CB-SEM for theory building, and for higher-order constructs.

In addition, PLS-SEM is by design, appropriate for hypotheses testing. As Lowry and Gaskin (2014) note, “perhaps most important, PLS has a different goal than CB-SEM. CB-SEM seeks to model the covariation of all the indicators . . . to demonstrate that the assumed research model (the null hypothesis) is insignificant, meaning that the complete set of paths, as specified in the model that is being analysed, is plausible, given the sample data . . . The primary objective of PLS, in contrast, is to demonstrate that the alternative hypothesis is significant, allowing the researcher to reject a null hypothesis by showing significant t-values” (Lowry and Gaskin, 2014, p.130).

They continue by stating, “since CB-SEM can support a large number of alternative, but statistically equivalent, models that can be supported by the same data and because of over-fitting . . . it becomes difficult to argue causality using a CB-SEM analysis” (Lowry and Gaskin, 2014, p.130).

Lowry and Gaskin (2014) also argue that PLS-SEM is highly preferred over CB-SEM when the distributions of the variables are either non-normal or unknown, and the sample is relatively small (Lowry and Gaskin 2014, p.133) – as previously mentioned, both of these issues are relevant in the present research. Many other review articles have noted that PLS-SEM is more appropriate for early stage hypothesis testing and theory development, when sample sizes are relatively small, or when the distribution of the variables are non-normal or unknown – all conditions that describe the present research (e.g., Gefen et al.2000; Hair et al. 2012; Willaby et al. 2015; Richter et al. 2016).

Since statistical significance in SmartPLS 3.1 is determined from a bootstrapping method of examining sub-samples, the distributional issues and the use of a full network sample of a single company (which, in turn, may be thought of as a sample of a broader population of companies) are not a problem with PLS-SEM. Other key characteristics for using PLS-SEM (from Hair et al. 2014, citing *The Journal of Marketing Theory and Practice*, 19(2), 2011, pp. 139-151) are described in Table 3.

Table 2: Excerpt Data and Algorithm Parameters Hair et al.2014:16

<b>Data Parameters</b>	
<b>Sample Size</b>	Easily handles smaller samples Generally, achieves high levels of statistical power with smaller samples Larger samples also increase precision of PLS estimations
<b>Distribution</b>	PLS-SEM is a nonparametric method
<b>Missing Values</b>	Highly robust as long as missing values are below a reasonable value
<b>Measurement Scale</b>	Works well with data types, metric, quasimetric (ordinal), scaled, binary coded (with some restrictions) Some limitations when using categorised data to measure endogenous latent variables
<b><u>Algorithm Properties</u></b>	
<b>Objective</b>	Minimises the amount of unexplained $R^2$ values
<b>Efficiency</b>	Converges after a few iterations to the optimum solution.
<b>Construct scores</b>	Estimated as linear combinations of indicators Used solely for predictive purposes Used as inputs for subsequent analyses Is not affected by data inadequacies
<b>Parameter estimates</b>	Largely consistent High levels of statistical power

The two major disadvantages of PLS-SEM or PLS path models highlighted are:

- i) the paths must be single headed representing directional relationships rather than multi-directional models (dual headed arrows). However, single-directional models are often considered more predictive and interpreted as causal relationships, and
- ii) there is no typical model ‘goodness of fit’ statistics as in CB-SEM.

### **3.9. Chapter 3: Summary**

The Hypotheses and Structural Equation Model chapter involved a discussion of the evidenced support surrounding this research topic as a precursor to the structural path model and positivist philosophy further developed in Chapter 4. Mentioned also were the pros and cons to the approaches and methodologies adopted.

## Chapter 4: Research Approach, Instruments and Scales

Chapter 4 discusses the guiding principles leading to the research approach/paradigm, the research sample, and the instruments/scales adopted used in the analysis.

### 4.1. Background Guiding the Research Methodology

The guiding principles to research practice revolves around the theoretical stance adopted by the researcher and epistemology, or the knowledge regarding the methods validity, scope and distinction between justified belief and opinion (see Gray 2013). Additionally, the type of research methodology adopted also depends on the ‘ontology’ perspective of the researcher. Gray (2013) states that “while ontology embodies understanding *what is*, epistemology tries to understand *what it means to know*. Epistemology provides a philosophical background for deciding what kinds of knowledge are legitimate and adequate “(Gray 2013, p.19).

<b>Epistemology divided into 3 perspectives:</b>	<b>Theoretical Perspectives</b>	<b>Methodology</b>	<b>Methods</b>
Objectivism	Positivism	Experimental Research	<ul style="list-style-type: none"><li>• Sampling</li><li>• Statistical Analysis</li></ul>
Constructivism	Interpretivism <ul style="list-style-type: none"><li>- Symbolic interactionism</li><li>- Phenomenology</li></ul>	Survey Research Ethnography Phenomenological Research	<ul style="list-style-type: none"><li>• Questionnaire</li><li>• Observation</li><li>• Interview</li></ul>
Subjectivism	Critical Inquiry Feminism Post modernism	Grounded Theory Heuristic Inquiry Discourse Analysis etc.	<ul style="list-style-type: none"><li>• Focus Group</li><li>• Document Analysis</li><li>• Content Analysis etc.</li></ul>

*Figure 2: Research Perspectives Adapted (Gray 2013:19)*

The combination of research paradigms which may consist of objectivism and constructivism (quantitative and qualitative in design) are normally labelled as positivist or phenomenology (see Mangan et al. 2004).

Positivism generally depends on quantifiable observations which lend to statistical analysis. 'Positivism' can also be described as a philosophy that operates in accordance with an empiricist view that knowledge stems from human experience. Many authors state that positivism has an ontological view of the world describing it as comprising discrete, observable elements and events that interact in an observable, determined and regular manner (see Whetsell and Shields 2013; Aliyu et al. 2014; Dudovskiy 2016).

Dudovskiy (2016) outlines key factors which are primarily indicative that the research philosophy is primarily positivist. These are:

- The research philosophy should consist of factual knowledge obtained through observation
- The measurement of data is trustworthy
- The role of the researcher is limited to solely data collection and interpretation
- The researcher's role is independent
- The research findings are observable and quantifiable
- The research progresses through a series of hypotheses and deduction.

Additionally, Dudovskiy (2016) also highlights that a study which attempts to access, for example, the impact of leadership style on employee motivation through conducting in-depth interviews embraces a phenomenological philosophy.

Notably, the present research is largely positivist grounded in the theoretical framework offered by the Conservation of Resources theory and the adoption of a hypothetical statistical analysis approach to deduce and explain the impact of the constructs (leadership style, organisation culture and social networks on burnout (see Racher and Robinson 2003; Mangan et al. 2004).

## 4.2. Research Design: A Quantitative Based Case Study

As discussed in the section above, the research adopts a positivist philosophy. It is also an empirical examination of a single-institution technology company using a hypothesis model to predict the impact of leadership style, organisation culture and social networks on burnout and in some cases, the relationships between the concepts under the COR framework. The research further examines whether this has any impact on individual perception of department performance deemed important by the CEO of the sample organisation.

Given that the research involves a single company, it represents a type of “case study.” A case study is defined as: “an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when boundaries between phenomenon and context are not clearly evident (Yin 1994, p.13). Yin (1994, 2003) suggests that a case study inquiry copes with the technically distinctive situation in which there will be many more variables of interest than data points. This relies on multiple sources of evidence needing to converge in a triangulating fashion and benefits from the prior development of a theoretical proposition to guide data collection analysis (see Yin 1994; Yin 2003).

Zainal (2007) reports that “Case study research, through reports of past studies, allows the exploration and understanding of complex issues. It can be considered a robust research method particularly when a holistic, in-depth investigation is required” (Zainal 2007, p.1).

A case study, however, is not necessary qualitative. Case studies can also be quantitative by assessing detailed data acquired from a single or small set of organisations.

### 4.2.1. *Types of Case Studies*

Zainal (2007) highlights the different types of case studies:

- i) Single case study design- where there is new or unique information and where the study requires triangulating with other methods to confirm the validity of the process.



- ii) Multiple case study design – the study can be adopted from varied sources of real life events or where there are sources of information through replication of similar design.

The current research adopts a single case study design. The major types of case studies are described as follows (see Zainal, 2007):

- i) Exploratory – used to explain any phenomenon in the data that is a point of interest to the researcher,
- ii) Descriptive – used to describe data or phenomenon normally beginning with a descriptive theory which supports the phenomenon,
- iii) Explanatory- this examines the data both at the surface and deeper level. Used mainly for explaining causal relationships in complex or multi-variate cases like through a knowledge driven theory, problem solving theory and or social interactive theory where members of the professional network and researchers to communicate frequently with each other,
- iv) Interpretive - the researcher aims to interpret the data by developing a conceptual model either supporting or challenging the assumptions made, and
- v) Evaluative – delves further by adding judgement to the resulting phenomena found in the data.

Given the description of the different types of case studies, the current study is primarily explanatory and interpretative using well established quantitative methodologies and scales to explore complex relationships within a single organisation under the guidance of the Conservation of Resources framework.

Sometimes case studies are viewed as a “grounded theory” approach where the researcher is attempting to systematically understand relationships in the data that will lead to the generation of additional theory. This type of research has been viewed by researchers such as Andrade (2009) as interpretive and phenomenological. Andrade (2009) also points out that while case studies can be either qualitative or quantitative, its very definition is positivist (see also Kin 1994, 2003). Andrade (2009) also outlines an advantage of grounded theory as inductive, contextual and process based in nature which could be applied to either positivist or an interpretive stance citing neutrality in application (see Andrade 2009, p.46).

The next section examines the research sample, and its implications for the research study.

#### **4.3. The Research Sample**

The research sample consists of all thirty-two management personnel of a major ‘group’ within an Information Technology (IT) company located in the Caribbean island nation of Trinidad and Tobago.

Trinidad and Tobago is an island nation located with the southern part of the Caribbean close to the northern edge of South America. While originally colonised by the Spanish, the islands came under British control in the early 19<sup>th</sup> century and gained their independence in 1962. The population of Trinidad and Tobago is approximately 1.2 million, with a diverse economy. According to the CIA World Fact book, the official language is English with 100% of the population speaking English as the primary language; however other languages are also spoken including Spanish, French, and Caribbean Hindustani (a dialect of Hindi). The legal system operates under English common law. While Trinidad and Tobago, is an English-speaking nation, it is considered a less economically developed, primarily rural country that ranks 70<sup>th</sup> in the world in GDP per capita and 138<sup>th</sup> in the world in life expectancy (source, CIA World Factbook, 2016). In addition, while the official literacy rate is above 98% several independent studies have indicated the true Trinidad and Tobago full literacy rate may be closer to 50% (see Allen-Agostini, 2012 and Lucie-Smith 2012). Trinidad and Tobago ranks 54<sup>th</sup> on the 2009 PISA test scores.

The ‘group’ used for the research consists of three subsidiary companies, each offering a different service, as well as the group’s senior management team. The sample includes the Group Chairman, the CEOs of the subsidiary companies and the Heads of all Departments within the group and its three subsidiary companies. This ‘group’ operates mostly independent of the parent organisation in developing and implementing its strategies, products and services. The organisation itself is highly representative of the total IT industry in the Caribbean in terms of growing innovation, consistency in management structure, and indigenous ownership.

The sample consists of all the individuals in the ‘group’ that are considered at the management level, and thus represents a “full”, “complete” or “total” network (census) sample within the target organisation.

The professional background of the management sampled ranged from IT specialists, programmers, previous entrepreneurs, telecommunications and IT engineers, individuals serving on state boards, and members of the Caribbean Telecommunications Union (CTU).

The gender compositions of the top four executives were male, while among the rest of the management sample there was only one female. All the individuals in the sample had college educations. The four top senior executives all had a time in service of greater than twelve years with the firm, while the rest of the management respondents had generally served over five years in the firm. Given the generalisability of the census to be predominantly male, the composition of the results reported is based on the impact of burnout on a generally male population.

#### *4.3.1. Choice of Sampling Method*

Since the research involves estimating management and operations related centralities for managers within the organisation, the choice of the research sampling method was guided by the desire to obtain a 100% response rate of the target sample to estimate the social network components of the research (Pryke 2012). This “full-network” sample approach allows all individual ties with others within an entire population to be estimated. The full-sample approach is noted by Wassell et al. (2011) and Hanneman and Riddle (2005) as the sampling method that yields maximum information for a social network analysis, and the determination of centralities within the social network.

It should be noted that while the full-sample method provides the best information for social network analysis, there are other sampling methods commonly used when a full-sample cannot be obtained. These include: i) the snowball method, ii) ego centric-network and iii) multi-relations sampling techniques.

The snowball method of sampling describes a sampling technique which begins with a focal actor or set of actors where each individual sample is asked to name some or all their relational ties. The process is continued until few or no remaining or new actors can be named (see Hanneman and Riddle 2005; Goodman 2011; Heckathorn 2011; Wu et al. 2011).

The ego-centric network sampling focuses only on the individual actors and not the whole network. Using this network method, information is collected only on the connections related to each specific 'ego' from which a full picture can be obtained of the local networks or neighbourhood of each individual. This sampling approach facilitates how networks affect individual actors but fails to give a complete look of the entire network (see Handcock and Gile 2010).

The multi-relations sampling method describes those network ties among a special interest group (example: university faculty, fraternity or association) with whom the actor(s) share a common interest or interact outside the general organisation. The positions that actors hold in the web of group affiliates are multi-faceted and in which one set of relations may support or contract the position(s) in another. An example is: I do not share a friendship tie with x, but both x and I, serve on the same committees with x in or outside the workplace. The collection of data about certain types of relations among actors is sampling from a population of possible relations. This is achieved through questions regarding which types of relations among actors that are most relevant. Hanneke et al. (2010) discuss the limitations of multi-relations sampling data.

While a full-sample approach provides the most accurate information and the ability to estimate the full network relationship, the sampling methodology is often difficult to execute in survey-based research since a 100% response rate is required (see Stumpf et al. 2005).

However, given the size of the sample within an important organisation within the Trinidad and Tobago's high technology community, attaining access to 100% of its senior management team was a key requirement for conducting the social network analysis component for this study (see Cross et al. 2002).

In one respect, this research adopts a 'census' approach to the study by examining 100% of all the management group of the subject company/group and its three subsidiary companies. However, there is substantial service variation within the subsidiaries. Each of the subsidiary companies offer a different IT technology related service. Senior personnel include the Group Chairman, CEO's and Heads of Departments. The group operates independent from its parent organisation in product delivery and strategy development. The term 'census' has been applied and refers to the total number of sampled participants in this study which is the total 100% of the management. In social network literature, the terms 'full network', "whole network", or "complete network" sample are the preferred terms which is used to depict the entire 100% of the target study population. The term 'full network sample' will be used throughout the dissertation although it is recognised that this also represents a type of 'census'.

It should also be noted that a full network sample (census) size of thirty-two is similar to most other full, complete or whole-network studies using primary, survey-based methods that have been published in peer-reviewed, scholarly journals. For example, Jedd and Bixler (2015) used a sample of sixteen in analysing the full network in a forest conservation organisation. Jostad et al. (2013) employed a sample of twelve in their full network analysis of an outdoor adventure education program. Cooke and Hall (2013) used a sample of thirty-one in their full network analysis of a UK LIS research community. Provan et al. (2005) had a sample of thirteen in their full network analysis of community partnerships for diabetes control along the U.S.-Mexican border. Lopaciuk-Goncaryk (2011) performed an analysis on their full network sample of twenty-seven teams in a financial institution.

Provan et al. (2002) analysed a full network of forty-four in a healthcare system and Antioco et al. (2008) used a sample of fifty-four in their full-sample study of managers in an R & D firm.

As previously mentioned, given the complexity of the hypothesised relationships in this study, the heterogeneous nature of the network incorporating three different types of communication (management/strategy, operations/technical, and friendship), and the need for respondents to complete a large number of scale items related to burnout, leadership and perception of culture, it was critical to obtain a 100% response. Because of the difficulty of getting a 100% response rate with primary, survey-based research (versus secondary research such as network studies of interlocking corporate directorships, co-authorships on articles, or patents), network studies employing survey-based data of more than 50 respondents almost always employ other types of sampling techniques, such as the snowball method. For example, Antioco et al. (2008) attempted to use a single firm, full-network census in their network study of product design decision making - they ended up with a sample of fifty-four, but this represented only a 92.6% response rate. However, anything less than a full network (100% response) will always provide incomplete information, particularly when calculating critical network measures such as centrality that will be used as inputs to a regression or SEM analysis.

Additionally, Wolf et al. (2013) highlight that determining sample size requirements for conducting structural equation models were biased based on antiquated 'rules of thumb' approaches. They report that: i) one size (size of sample) does not fit all case studies and ii) there was a tendency of bias in larger estimates by stating "this likely reflects larger standard errors (evidenced by larger standard error estimates for the regressive paths) as the true value becomes more extreme, thus necessitating increased sample size "(Wolf et al. 2013, p.9). Finally, as discussed later, PLS-SEM is particularly well-suited for estimating structural equation models for smaller sample sizes.

The choice of the target firm for the research was based on: i) accessibility, ii) that it was a large, multi-division company with a management team of sufficient size to examine using SEM and social network analysis, and iii) the company was the only indigenous company whose senior management structure was based in Trinidad and Tobago.

#### **4.4. Research Timeline**

The research timeline, was guided by a project management timeline offered at the Research Proposal stage and submitted to EBS. In association with the supervisor, the research undertook many exploratory discoveries from start to execution of the research instrument design by this researcher. The research timeline was twelve months. The timeline highlighted milestone deliveries which included: i) direct interviews constrained to two months (60 days), ii) data processing and validation to 90 days and remaining time schedules for approvals re: the manuscript design, and consultations on the material presented. Two time-lags were experienced which included changes in the scope of material, changes in design, added field study requirements and responses to examinations. Research timelines were met and delivered to examinations based on pre-set scheduling of EBS.

#### **4.5. Pilot Study**

No pilot study was conducted in the present study for several reasons. Firstly, since a full network sampling approach was undertaken, it is important that each response had equal validity (see Cross et al. 2002). Pilot studies (see Arain et al. 2010) normally consist of a subset of the main population. If some of the respondents had prior sight of the instrument this would have resulted in possible response bias for the primary study (see: van Teijlingen and Hundley 2001; Lancaster 2015).

Secondly, there is generally no need to conduct pre-testing on questionnaires which are already validated and universally used within English-speaking countries for assessing work-related burnout, leadership-style, and organisation culture (e.g., Creswell, 2012; Creswell et al. 2003). The scales were utilised without modification and merged into one document with permissions from research authorities and with other scholarly authors adopting similar approaches (see Vigoda- Jadot 2006; Jogulu 2010).

Thirdly, classification of data (in terms of gender and tenure) was not deemed necessary since all but one of the respondents was male, and all personnel had over five years of service with the firm. Data was not collected based on classification.

#### **4.6. The Research Instrument - Questionnaire**

The adoption of a 'pen and paper' questionnaire was judged the best approach for obtaining information. The questionnaire incorporated standard, regularly-used and validated instruments to examine leadership style, work-related burnout, organisation culture and social networks within the sample organisation. The scales employed in the research were used with permissions from the various developers such as Mind Garden (web: <http://www.mindgarden.com>) and the OCAI Institute (web: <http://www.ocaionline.com>).

This customised approach to data gathering and investigation has been guided by the previous research of Hughes et al. (2002), Creswell et al. (2003), Schepers et al. (2005), Vigoda-Gadot (2006), Creswell and Plano Clark (2007), Reed et al. (2009) and Rafiq-Awan and Mahmood (2010).

The instrument was divided into five parts and designed to obtain a self-evaluation from the participants of their perception of their preferred personal leadership style; their work-related burnout along the dimensions of emotional exhaustion, efficacy, and cynicism; their perception of the dominant organisation culture; the social network relationships related to management, operations, and friendship; and their perception of department performance. This collective use of validated instruments into one 'cohesive document' without modification has been guided by previous researchers like Vigoda-Gadot (2006).

The use of non-modified, previously validated and tested instruments also supports the non-requirement for pilot study or pre-testing of instruments within the environment. This, and given the fact that 100% of the management team were college-educated, aided the administration of the instrument.

#### **4.7. The Research Ethics Protocol**

The research protocol was developed in accordance with the guidelines of the Edinburgh Business School (EBS) Research Ethics and Code of Conduct (web: <http://ebs.global.net>). The research contract between the researcher and respondents was upheld through letters of access and confidentiality arrangements at all stages of research development. The nondisclosure of the company's name, and or references to its actual trading components has been agreed upon by this researcher and compliance maintained.



The subject company is a high technology provider in Trinidad and Tobago whose time in operations spans over 50 years. The questionnaire sample as outlined in Appendix D was also pre-approved by all parties as a precursor to conducting the direct interviews with senior management. Access and permissions were pre-approved by the Group CEO and Group HR Manager. This researcher adopted an independent stance throughout the process.

#### **4.8. Interview Approach**

In gathering the data to examine the study's hypotheses, and to achieve the 100% response rate suggested in conducting a social network analysis, direct interviews were conducted with each of the respondent managers in the research sample (n=32).

The name and surname of each interviewee was affixed at the top of the instrument and later coded to ensure confidentiality and anonymity. The participants, prior to the commencement of the interview, were requested to answer all questions with the completed response placed in a sealed envelope and later mailed to an EBS-approved third party for coding and re-submission (without respondent names) for data analysis. Direct interviews with the managers ensure a 100% response rate and ensured that the instrument was filled out at the same time.

#### **4.9. Scales and Instruments Used in Research**

As previously mentioned, the research scales selected for this current research were:

- i) Work-Related Burnout – The Maslach Burnout Inventory-General Services (MBI-GS) by Maslach et al. (2001) was selected for the present study. This scale is considered the most widely-used and reliable research instrument for measuring and assessing work-related burnout.
- ii) Leadership Style – The Multi-Factor Leadership Questionnaire short (MLQ- 5x) by Bass and Avolio (2000) was selected. This leadership scale is one of the most commonly used instruments for assessing style of leadership and includes the dimension of “Inspirational Leadership”.

- iii) Organisation Culture- The Organisational Culture Assessment Instrument (2011) by Cameron and Quinn was used. The OCAI instrument has been used in numerous empirical studies for assessing the organisation's culture type(s) along four different dimensions ( Vigoda-Gadot 2006).

In addition, social network data was collected to estimate the centrality measures. A full network sample type questionnaire instrument similarly to the one employed by Borgatti (2009), was used to identify the social network relationships along the three dimensions of management/strategy decision-making communication, operational and technical communication, and friendship. Since more than one form of communication is being examined, this is what can be described as a “heterogeneous” communication network.

Each of these scales are discussed in more detail below.

#### 4.9.1. *The Maslach Burnout Inventory (MBI-GS)*

The MBI-GS is a sixteen-item survey which measures the individual perceptions of work-related burnout for all occupations. The MBI-GS instrument has been widely adopted by researchers in assessing burnout in various empirical studies (see Baba et al. 1999; Schutte et al. 2000; Bakker et al. 2002; Schaufeli et al. 2002; Schaufeli and Taris 2005; Richardsen and Martinussen 2005; Wu et al. 2007; Demerouti et al. 2010; Alarcon 2011).

The scale is rated on a five-point Likert scale. The instrument categorises work-related burnout into three sub-class dimensions: i) emotional exhaustion, which is described as the result of the depletion of emotional resources in the workplace, ii) cynicism, which is described as the result of the individual distancing himself from the workplace (depersonalisation) and work-task, and iii) professional personal efficacy, which is the result of ambitious or self-driven goals of job engagement. The full MBI-GS scale was used in this study. The elements of the work-related burnout scale are as follows:

i) Work-Related Burnout Sub-Scale: MBI-GS - Emotional Exhaustion

The first dimension in the MBI-GS is *emotional exhaustion*. This sub-scale measures the emotionally expressed or generated feelings which the workplace generates. The individual items of this dimension are:

- Question 65 – individuals' express being emotionally drained from the work tasks,
- Question 66 – individuals' express feelings of emotionally spent by the end of the day,
- Question 67 - individuals' express feelings of tiredness when faced with going into the workplace,
- Question 68- individuals' express feelings that completing a workday is strenuous,
- Question 70 – the individual comes to terms that they are burnt out.

ii) Work-Related Burnout Sub-Scale: MBI-GS - Cynicism

The second dimension in the MBI-GS scale is *cynicism*. Cynicism measures the individual distancing themselves from the work itself and/or developing negative views of the organisation. The individual items of the cynicism dimension are:

- Question 72 - the individual expresses feelings of lost interest since starting the job,
- Question 73 - the individual expresses feelings of a loss in work enthusiasm,
- Question 77 - the individual expresses a willingness to be isolated from others within the work space,
- Question 78 – the individual is aware of deliberately expressing cynicism to work and work contributions,
- Question 79 - the individual expresses a feeling of doubt about his individual work significance and contribution.

iii) Work-Related Burnout Sub-Scale: MBI-GS - Professional Personal Efficacy

The last dimension in the MBI-GS burnout scale is the *professional personal efficacy* dimension. The personal efficacy sub-scale measures the idea of reduced personal accomplishment within the workplace. While included in the MBI-GS, as discussed in Chapter 2, professional personal efficacy is often viewed more as a ‘personal performance’ dimension rather than a separate dimension of burnout.

The individual items are:

Question 69 – individuals’ express feelings of empowerment to solve work problems,

Question 71 – individuals’ express optimism in their contribution to the organisation workload,

Question 74 – individuals’ express confidence of being good at their jobs,

Question 76 – individuals’ feel confident that they have accomplished many worthwhile things within the organisation,

Question 80 – individuals’ feel confident in getting things done.

#### *4.9.2. Prior Reliability of the MBI-GS*

Many prior studies have examined the factorial structure, validity, and reliability of the MBI-GS in a variety of environments. For example, Bakker et al. (2002) examined the factorial structure of the MBI-GS in eight different occupational groups. They found that the proposed three-dimension model (emotional exhaustion, cynicism and professional personal efficacy) all had acceptable Cronbach Alphas, ranging from 0.70 to 0.90, with no cross loading among all three constructs thus meeting the general expectations for validity and model fit.

Richardsen and Martinussen (2005) similarly tested the MBI-GS among four different occupational groups. The researchers used Confirmatory Factor Analysis and multi-group analysis and reported that the original MBI-GS provided a good fit to the data stating that the, “internal consistencies of the sub-scales were statistically reliable in providing greater than the acceptable  $>0.70$ ” (Richardsen and Marinussen 2005, p.296). Other studies report similar results.

#### 4.9.3. Leadership Scale: MLQ-5x

The MLQ-5x (short) leadership scale, is a thirty-six-item instrument which examines three dimensions of the leadership styles adopted by managers: *Transformational*, *Transactional* and *Passive Avoidant* Leadership. The instrument is designed in two forms: a *self-rating* version and a *staff assessment of the respondent's direct leader*.

To encourage participation and to remove bias, only the *self-rating* instrument version was used in the present study where respondents were asked to provide responses based on their individual perceptions of their own personal style of leadership.

Access and permissions for the instrument were obtained from the license holder, Mind Garden (web: <http://www.mindgarden.com>). The following section discusses various sub-scale dimensions examined under the MLQ-5x. Although the questionnaire developed for this study included the full MLQ-5x scale, the modelling and hypotheses testing in the present research only used the transformational leadership sub-scales since differences in transformational leadership styles between the employee and senior management are most likely to result in the expenditure of an employee's personal resources and the development of coping strategies under the Conservation of Resources model.

#### 4.9.4. Leadership scale: MLQ-5x - Transformational Leadership

Judge and Bono (2000) describe transformational leaders as, “those who obtain support by inspiring followers to identify with a vision that reaches beyond their own immediate self-interests” (Judge and Bono 2000, p.751). The MLQ-5x has been used to examine transformation leadership in numerous empirical studies and Heinitz et al. (2005) refer to the MLQ-5X as the preferred instrument for analysing transformational leadership.

There are five sub-scales for transformational leadership in the MLQ-5x:

- i) The first dimension for transformational leadership in the MLQ-5x is *Idealised Influence Attributes* which addresses the personal attributes associated with the leader/follower with questions like the leader's influence in instilling pride in others to displaying a sense of power of confidence.

The individual items under *Idealised Influence Attitudes* are:

Question 38 - the leader instilling pride in others for being associated with him,

Question 46 – the leader going beyond the good of the group,

Question 53 - the leader speaks to displaying a sense of power and confidence,

Question 49 - the leader acts in ways to win the respect of his/her staff.

- ii) The second dimension for transformational leadership in the MLQ-5x is *Idealised Influence Behaviours*. This dimension addresses the beliefs, values, mission and vision that the leader emulates through verbalised overtures and dialogue of his personal beliefs/values.

The individual items examined in this sub-scale are:

Question 34 - the leader speaks about his most important value and beliefs,

Question 42 - the leader outlines the importance of having a strong sense of purpose,

Question 51 - the leader considers the moral and ethical consequences of his decisions,

Question 62 - the leader emphasises the importance of a collective mission.

- iii) The third dimension for transformational leadership in the MLQ-5x is *Inspirational Motivation*. This describes the leadership style as ‘positively inspiring an outlook by the team’ and the achievement of future goals.

The individual items examined in this sub-scale dimension are:

Question 37 – the leader speaks optimistically about the future,

Question 41 - the leader talks enthusiastically about what needs to be accomplished

Question 54 - the leader articulates a compelling future vision,

Question 64 – the leader expresses confidence that goals will be achieved.

- iv) The fourth dimension for transformational leadership in the MLQ-5x is *Intellectual Stimulation*. *Intellectual Stimulation* describes the style of the leader as encouraging creativity and fostering an atmosphere in which followers feel compelled to think about problems in a new way without public criticism.

The individual items which examine this sub-scale are:

Question 30 - the leader re-examines critical assumptions by questioning their appropriateness,

Question 36 - the leader seeks differing perspectives to solving problems,

Question 58 – the leader gets others to look at problems from different angles

Question 60 – the leader suggests new ways of looking at the completion of assignments.

- v) The fifth and last dimension for transformational leadership in the MLQ-5x is *Individualised Consideration*. In this dimension of leadership, leaders are viewed as mentors and coaches. Followers are treated as individuals and there is mutual respect and communication.

The individual items which examine this sub-scale in the instrument are:

Question 43 - the leader spends time teaching and coaching,

Question 47 - the leader treats others as individuals rather than just a member of a group,

Question 57 - the leader considers others as an individual with different needs, abilities and aspirations from the rest,

Question 59 - the leader helps others to develop their strengths.

#### 4.9.5. *Prior Reliability of the MLQ-5x*

Many studies have examined the factorial structure, validity and reliability of the MLQ-5x. For example, in Heinitz et al. (2005), an examination of the MLQ-5x instrument and its structural validity was undertaken. They reported discriminant validity on the full 45-item MLQ-5x with Cronbach Alphas ranging between 0.62 and 0.70. The authors concluded that the scale had satisfactory internal consistency despite the somewhat low Cronbach Alphas. Muenjohn and Armstrong (2008) also tested the validity of the MLQ-5x using Confirmatory Factor Analysis (CFA) and a multi-data source of 138 cases. The authors reported that the overall fit of the MLQ-5x nine correlated factor model was adequate, with Cronbach Alphas ranging up to 0.87.

One of the most cited research studies which supports the validity of the MLQ-5x is Antonakis et al. (2003). In Antonakis et al. (2003), a large study was undertaken through eighteen independent samples (n=6525) in examining the validity of the measurement model and factor structure of the MLQ-5x. The authors conclude that: i) the results present evidence that the nine-factor model (for the full MLQ-5x) best represents the factor structure, ii) that context should be considered in theoretical conceptualisations and validation studies, and iii) given the fact that large independent samples were undertaken, that the generalisability of the nine-factor model (for the full MLQ-5x) was strong.

#### *4.9.6. Organisation Culture Scale: OCAI*

The OCAI instrument (Cameron and Quinn 2011) has been described by Suderman (2012) as a psychometric tool to help organisations identify their current (now) and preferred organisation culture. The OCAI instrument scale is a twenty-four item, five-point Likert type instrument. Fralinger and Olson (2007), describe the OCAI instrument by stating “this framework serves as a way to diagnose and initiate change in the organisation culture that organisations develop as they progress through their lifecycles and cope with external environment pressures” (Fralinger and Olson 2007, p.85).

#### *4.9.7. OCAI: Sub-Scales*

The OCAI scale is divided into four sub-scale dimensions: Clan, Adhocracy, Market Orientation and Hierarchy Culture. The section below examines the individual sub-scales within the OCAI instrument:

- i) OCAI: Clan Culture - characterises the organisation as a nice place to work, a family setting where personal information/ideas are freely shared. The individual items used in the Clan Culture dimension for the OCAI are:

Question 8 - the senior management of the organisation as mentoring, flexible and nurturing,

Question 12 - the leadership of the organisation as based on teamwork, participation and consensus based,



Question 17 - the foundation glue of the organisation as based on loyalty, mutual trust and high commitment,

Question 21 - the overall organisational culture as focused on human development, high levels of trust, participation and openness,

Question 25 - the individual's perception of the organisation's success as focused on human resource development, staff commitment and overall concern for people.

ii) OCAI: Adhocracy Culture - the culture is characterised as entrepreneurial, risk-taking and dynamic. The individual items used in the Adhocracy Culture dimension in the OCAI are:

Question 5 – the organisation is perceived as dynamic and risk taking,

Question 9 – the senior leadership team is perceived as generally exemplifying entrepreneurship, innovation and risk,

Question 13 - the senior management's leadership style is characterised as individual risk taking and innovative,

Question 18 - the individual perceives that foundation glue of the organisation rests on its commitment to innovation and cutting-edge development,

Question 22 – the organisation is perceived to focus on new resource acquisition, and prospecting for new valued opportunities,

Question 26 – the organisation is seen to attribute its success to product leadership and innovation.

iii) OCAI: Market Orientation Culture - the organisation is perceived as being results and goal oriented where its staff are competitive, and focus is on winning. The individual items used in the Market Orientation dimension in the OCAI are:

Question 6 – the organisation and staff are viewed to be highly market competitive, results-oriented and focused on getting the job done,

Question 10 – the organisation's senior leadership are viewed as results-driven, no nonsense and aggressively focused,

Question 14 - the style of the senior management is viewed as hard driving, high demand achievement oriented and competitive,

Question 19 – the foundation principle binding the organisation is perceived to be based on achievement and goal accomplishment,

Question 23 - the organisation's emphasis is based on hitting stretch targets and market place wins/dominance.

- iv) OCAI: Hierarchy Culture - where the organisation is characterised as a formal place where procedures and policies govern the actions of its staff and management and success is determined on low cost, dependable delivery. The individual items used in the Hierarchy dimension in the OCAI are:

Question 7 - the culture of the organisation is perceived as a very controlled and structured place with formal procedures,

Question 11 - the organisation's senior leadership team exemplifies co-ordination, organising and efficiency,

Question 16 – the organisation's senior management team is defined by its security of employment, conformity, productivity and stable relationships,

Question 20 – the foundation principles holding the organisation as built on formal rules and procedures, maintenance and efficient operations are important,

Question 24 – the organisation's emphasis is permanence, stability, efficiency control and smooth operations,

Question 28 – the organisation is defined by its success on low cost production, efficient scheduling and dependable delivery.

#### 4.9.8. *Calculating the OCAI score*

With the OCAI instrument the dominant culture is generally regarded as the dimension that receives the highest summed scores from its 5-item questions. Oftentimes, each of the four areas is limited to a score of 100, with the highest score indicating the 'dominant' culture. Sometimes the OCAI dimensions are linked to a radar diagram which presents a visual analysis of the various culture types. The current study addresses only the current 'organisation culture' element and is worded in this manner.

#### 4.9.9. *Prior Factor Structure of the OCAI Scale*

Many research articles suggest that the OCAI is a key method for measuring organisation culture. Heritage et al. (2014, p.9) report broad-based validity of the four-factor OCAI scale with acceptable reliability of Cronbach Alphas  $>0.70$ . They reported that their confirmatory analysis supports the four-factor structure of the OCAI for the ‘current’ organisation culture analysis but recommended that more research work was necessary in examining the ‘ideal culture’ segment.

The OCAI culture instrument has also been examined in international environments. Choi et al. (2010), for example, tested a Korean language OCAI culture instrument which bore the same similarities as the English version. Choi et al. (2010) report that in both versions, statistical significance in terms of scale reliability was achieved by both the English and Korean versions of the OCAI. The English version of the OCAI had Cronbach Alphas ranging from 0.79 to 0.92 while the Korean OCAI had Cronbach Alphas ranging from 0.78 to 0.92. Berkemeyer et al. (2015) also found a four-factor profile using the OCAI for school culture.

#### 4.9.10. *Social Relationships and Network*

This section discusses the method used to measure the network relationships within the sample. This was accomplished by asking three questions and obtaining the responses of all thirty-two managers in the Group (group headquarters and the three subsidiary organisations), or 100% of the management team within the sample group (see Cross et al. 2002). The instrument was designed where the names of each of the thirty-two managers were provided and each respondent was asked to individually rate (on a 5-point scale) the level of their communication relationships with all other managers. The dimensions examined were: Management/Strategy Communication, Operations/Technical Communication, and Friendship Relationships.

- i) *Management Communication.* The individual item examining ‘Management Communication’ is worded:

“How often do you communicate with the following people on strategic/general management issues?”

- ii) *Operations Communication*. This describes the interaction of a manager with all the other managers on job-related operational or technical issues. The wording of this item is:

“How often do you communicate with the following people on operational/technical issues related to the job?”

- iii) *Friendship Interaction*. The third dimension evaluated is friendship relationships. This describes the frequency of relationships within the organisation on a personal or friendship basis. This was worded:

“How often do you interact/communicate with the following people on personal issues or as friends?”

The scale ranking on each of the social network questions ranged from 0 - not at all/do not communicate, to 4 - Frequently/Always. Respondents were instructed to answer all the questions and were instructed that if no communication existed, a “blank” answer was interpreted as no communication exists (same as a “0”).

#### **4.11. Research Analytical Methodologies**

The next section of this chapter addresses the analytical methodologies of the research.

##### *4.11.1. Use of Social Network Analysis Software – UCINET 6.5*

The research used the UCINET 6.5 social network analysis software and NetDraw (Borgatti et al. 2002). The UCINET program describes all data as matrices and is specially designed for speed, robustness and accuracy. UCINET is a menu driven windows program. The program uses two kinds of input parameters and produces two kinds of output datasets which are used for further analysis (for example an actor-by-actor matrix whose  $ij$ th cell gives the number of cliques being that actors  $i$  and  $j$  are both members). This gives a spatial representation of the pattern of overlaps identified as clique overlap. Table 3 shows an example of matrix and ties within a Network.

*Table 3: Recreated Example of Network Relationships*

	A	B	C	D	E
A	0	1	0	1	1
B	1	0	1	0	0
C	0	1	0	0	1
D	1	0	0	0	1
E	1	0	1	0	0

In Table 3, Actor A has a tie with Actors B, D and E but not directly with C. In similar fashion, Actor B has a tie with A and C but does not have any direct ties with D and E.

For this research there were three matrices, one each for Management/Strategy Communication, Operations/Technical Communication, and Friendship contacts. Rather than the 1-0 matrix described above, since the questionnaire used in the present research study employed a five-point rating (0 to 4), the cells would have 0-4 score. UCINET can use progressive rating matrices.

#### *4.11.2. Freeman's Degree Centrality*

Centrality describes the actors in the social networks who possess more ties within the network than other actors, with those having higher centrality being in advantageous positions. The term centrality thus refers to 'high involvement' within a network. Hanneman and Riddle (2005) report network centrality as an effective measure of an actor's power potential within the network. Freeman's degree centrality is a commonly used "degree-based" measure of centrality that specifically indicates how central a network's most central node is relative to other nodes within the network (Freeman 1978). It should be noted that there are two commonly used Freeman centrality measures. Freeman "betweenness" centrality is defined by Freeman (1978) as the centrality measure of the amount of interactions between each node or company and Freeman "degree" centrality is the measurement of the number of connections

each node or member has. This study used the Freeman “degree” centrality measure as calculated by UCINET.

#### *4.11.3. Descriptive Statistics, Correlations, Cronbach Alphas, and OCAI Graphing*

In this current research and guided by the number of published material, similarly on the conservation of resources, burnout and other organisation factors, the calculation of descriptive statistics, correlation matrices and Cronbach alphas for the sub-scales were executed using SPSS. Note: the raw data score was transposed from Excel format and transposed into SPSS. For a more in-depth discussion (see Appendix F).

Additionally, the data for social networks (Freeman’s Centrality) was obtained using UCINET 6.5 and then inputted into SPSS. The OCAI data was also run in Microsoft Excel using the formula outlined by OCAI for distinguishing the ‘culture’ types.

### **Chapter 4: Summary**

In Chapter 4, several areas of the methodological research approach were addressed. The study involved a full network sample (census) of all the management level personnel within a large, independent ‘IT Group’ consisting of three subsidiary companies, and the group’s senior management team located in the Caribbean island nation of Trinidad and Tobago.

A total of thirty-two responses were obtained which represented a full network sample (100%). The research instrument adopted was a customised pen and paper instrument using validated and reliable instruments for measuring each of the identified constructs. These were: i) the leadership scale – MLQ-5x short, ii) the work-related burnout scale – MBI (GS), iii) the organisation culture scale – OCAI instrument. Additionally, the method used to collect the full data necessary to estimate network centrality was detailed.

The chapter, also reviewed the analytical procedures used in the research. This section discussed the use and application of UCINET in calculating network centrality measures for the three areas of management (decision-making), operations and technical communication, and friendship relationships.

## **Chapter 5: Data Analysis**

### **5.1. Introduction**

Chapter 5 is divided into three sub-sections, 5.2, 5.3 and 5.4. Section 5.2 reports the summary statistics of the various instruments utilised in the present study while section 5.3 reports and discusses the results from the social network analysis. Section 5.4 reports and discusses the hypotheses testing and model estimation results of the current study.

### **5.2. Summary Statistics for MBI-GS, MLQ-5x, and OCAI Scales**

#### *5.2.1. Burnout – MBI-GS*

For measuring work-related burnout, the MBI-GS instrument was used. The MBI-GS sub-scales are: i) emotional exhaustion, ii) cynicism, and iii) professional personal efficacy. As previously discussed, under the COR approach, emotional exhaustion is described as an individual's emotional condition attributable to the depletion of various personal resources. Cynicism represents individuals distancing themselves from the workplace, and professional personal efficacy represents the desire to accomplish individual goals within the organisation.

This section reports the summary statistics and Cronbach Alphas for each of the sub-scales of emotional exhaustion, cynicism and professional personal efficacy for the target sample. The target sample (n=32) used in the present study for hypotheses testing and model building are all college-level educated, managerial level personnel. The means of the individual items and the correlations between the items within the different sub-scales are provided in Appendix F.

For the study, the sub-scales values for the three work-related burnout dimensions were created by the average of the items for each MBI-GS sub-scale identified. For each of the sub-scales, there was at least one completed item in the sample (n=32) despite a few missing data points for some of the individual items. In the few cases where a data point was missing, the average was calculated by the remaining items in the sub-scale.

Table 4 provides the Cronbach Alphas for the sub-scales.

*Table 4: MBI-GS Scale: Descriptive Statistics and Cronbach Alphas*

	N	Mean	Std. Deviation	Cronbach Alpha
Burnout - Emotional-Exhaustion	32	1.51	1.09	0.93
Burnout – Cynicism	32	1.01	1.02	0.93
Burnout – Professional Personal Efficacy	32	3.29	0.40	0.75

The results shown in Table 4 indicate high Cronbach Alphas for the emotional exhaustion and cynicism sub-scales with values of 0.93 each, while the Cronbach Alpha for the professional personal efficacy sub-scale is 0.75, just at the acceptable limit used for the present research. Only the two sub-scales of emotional exhaustion and cynicism (depersonalisation) were used as both predictors and outcomes in the hypotheses testing and model building. Both dimensions fit well within the Conservation of Resources theory, with the sub-scale of efficacy used as an outcome variable of perceived personal performance.

#### *5.2.2. The Leadership Scale: MLQ-5x*

Table 5 shows the descriptive statistics of the leadership scale: MLQ-5x – sub-scales within the organisation. The respondents were asked to “describe your personal leadership style as you perceive it” along the different questions. As with the MBI-GS scale, the sub-scales values were created by the average of the items in each of the MLQ-5x sub-scales. In the few cases where a data point was missing, the average was calculated by the remaining items in the sub-scale. The means of the individual items and the correlations between the items within the different sub-scales are provided in Appendix F.

While this research is examining only the transformational leadership component, the full MLQ-5x was administered. Table 5 shows the sample statistics and Cronbach Alphas for all the sub-scales for the full MLQ-5x.



*Table 5: MLQ-5x: Summary Statistics and Cronbach Alphas*

	N	Mean	Std. Deviation	Cronbach Alpha
<b>MLQ-5x - Transformational:</b>				
Transformational leadership - Idealised Influence Attributes	32	2.84	0.69	0.29
Transformational leadership - Idealised Influence Behaviours	32	2.99	0.62	0,58
Transformational leadership – Inspirational Motivation	32	3.07	0.59	0.75
Transformational leadership -Intellectual Stimulation	32	3.03	0.42	0.51
<b>MLQ-5x - Transactional:</b>				
Transactional leadership- Contingent Reward	32	3.00	0.66	0.40
<b>MLQ-5x - Passive Avoidant:</b>				
Passive Avoidant 1eadership- Management by Exception- Passive	32	0.87	0.73	0.59
Passive Avoidant leadership –Laissez Faire	32	0.51	0.61	0.74

As previously discussed, while the full MLQ-5x instrument was administered, only the transformational leadership sub-scales were of interest for this study. Of these only the sub-scale element “transformational leadership - inspirational motivation” had an acceptable Cronbach Alpha of 0.75 and was therefore the leadership dimension used for hypotheses testing and model building.

Fortunately, the “transformational leadership - inspirational motivation” sub-scale was the leadership dimension of greatest interest under the Conservation of Resources argument in the hypotheses since it is this dimension that most probably involves interpersonal contact with other employees.

While the “passive avoidant - laissez-faire” leadership sub-scale also had a Cronbach Alpha (0.74) within normally acceptable limits, this was not used in the final hypothesis testing process.

### *5.2.3. Organisational Culture Scale – OCAI*

Table 6 shows the descriptive statistics of the OCAI sub-scales measuring managers’ perceptions of organisation culture within the sample organisation. The means of the individual items and the correlations between the items within the different sub-scales are provided in Appendix F. The dimensions which fall under the OCAI are:

- i) OCAI - Clan Culture which describes the organisation as an extended family organism and a place where there is a high interaction between and amongst individuals, participation, trust, openness and loyalty.
- ii) OCAI - Adhocracy Culture which best describes the organisation as dynamic, risk-taking and having a high focus on innovation, change, and new resource acquisition.
- iii) OCAI - Market Orientation which best describes the organisation as competitive, market and results-driven, and hitting stretch targets, and
- iv) OCAI - Hierarchy which best describes the organisation as a very controlled place with adherence to stringent policies and procedures.

*Table 6: Summary Descriptive Statistics- Cronbach OCAI sub-scales*

	N	Mean	Std. Deviation	Cronbach Alpha
OCAI - Clan Culture	32	2.60	0.64	0.84
OCAI- Adhocracy Culture	32	2.34	0.65	0.82
OCAI- Market Orientation Culture	32	2.87	0.59	0.79
OCAI- Hierarchy Culture	32	2.70	0.47	0.71

The individual sub-scale elements of the OCAI, except for OCAI – Hierarchy Culture, all had Cronbach Alphas greater than the 0.75 level used for this study. The Cronbach Alpha for the ‘Market Orientation’ sub-scale was 0.79, above the 0.75 level used in this study. The Cronbach Alphas for the sub-scales of ‘Adhocracy’ and ‘Clan’ cultures were 0.82 and 0.84, respectively. The ‘Hierarchy’ culture sub-scale had a Cronbach Alpha of 0.71, still relatively high.

In the OCAI instrument, the dominant culture is generally regarded as the dimension that receives the highest summed scores or average from its 5-item questions. Oftentimes, each of the four areas is limited to a score of 100, with the highest score indicating the dominant culture. In this sample, the OCAI - Market Orientation sub-scale has the highest mean value (2.87) and can therefore be considered the dominant culture under the OCAI model. The OCAI - Market Orientation sub-scale is therefore used for hypotheses testing (Hypothesis 4) and model building.

#### *5.2.4. Perception of Departmental Performance*

An examination of the individual’s perception of departmental performance is represented in the summary of the descriptive statistics and correlations in Tables 7 and 8, respectively. Perception of performance was examined via the instrument by asking the respondents the following two questions:

Question 81 - I feel confident that my department is functioning at an optimum level, and  
 Question 82 - In my opinion, my department's success is evidenced by its performance.

*Table 7: Descriptive Statistics- Performance*

	N	Mean	Std. Deviation
<b>Q81</b>	32	2.50	0.80
<b>Q82</b>	32	3.09	0.69

Table 8 provides the results for the correlations for the two department performance measures.

*Table 8: Correlations - Performance*

		Q81	Q82
Q81	Pearson Correlations	1.00	0.26
Q82	Pearson Correlations	0.26	1.00

\*\*= prob<0.01, \*=prob<0.05 (2-tailed)

The results from Table 8 indicate that there are no statistically significant correlations between the two questions.

### 5.3. Social Network and Centrality Analysis

#### 5.3.1. Social Network Analysis

Determining centrality was accomplished by asking three questions and obtaining the responses of all thirty-two managers in the Group (group headquarters and the three subsidiary organisations), or 100% of the management team within the sample group.

The instrument was designed where the names of each of the thirty-two managers were provided and each respondent was asked to individually rate (on a 5-point scale) the level of their relationships with all the other managers. The dimensions examined were: Management/Strategy Communication, Operations/Technical Communication, and Friendship Relationships. In this manner, a full matrix (32 by 32) was obtained for each of three dimensions, with scores ranging from 0 to 4.

Centrality describes the actors in the social networks who possess more connections than others, with the greater being advantageous. The term centrality thus refers to 'high involvement' within a network and is generally considered a measure of an actor's power potential within the network.

This section examines two aspects of the social network analysis. First, a graphical analysis of network connections is undertaken, and second, a calculation of Freeman's degree centrality measure is made. Freeman's degree centrality is the measure used in the final structural equation analysis.

### *5.3.2. Graphical Analysis of Social Networks*

Network relationships are illustrated using the UCINET 6.5 – NetDraw graphing feature which creates a visual image of the network relationships.

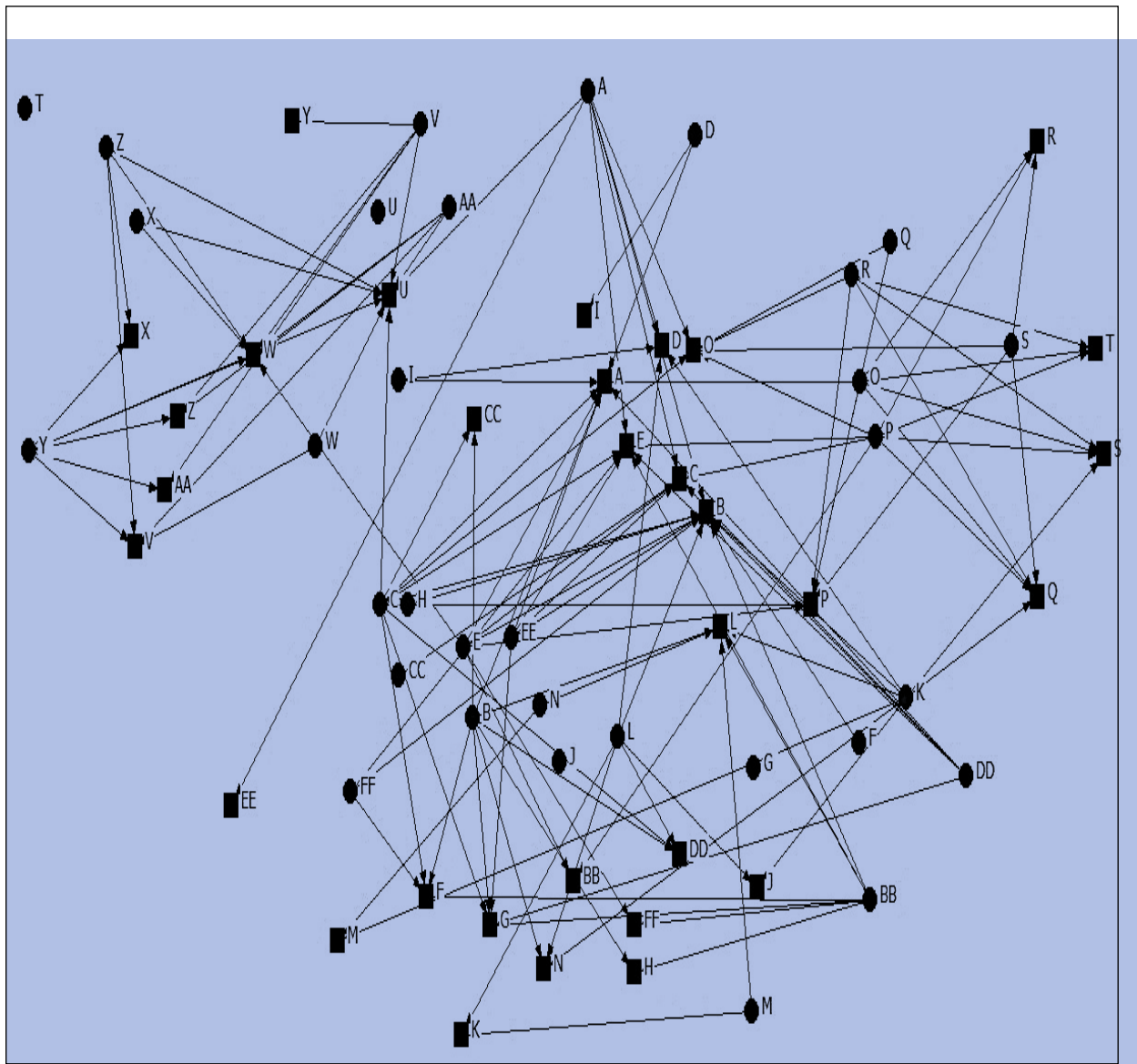
*Management/Strategy Relationships.* In this dimension, the ability of the individual to obtain ready access to the flow of individual communication, either strategic and/or general management issues, was examined.

In the questionnaire, the results derived were based on individuals' responses to the question "How often do you communicate with the following people on strategic/general management issues?" with each of the individuals identified in the matrix.

For graphing purposes, the data matrix was converted to a 0-1 binary from the five-point Likert questionnaire instrument matrix being a 0 to 4 value, with 0 for response values <2, and 1 for response values ≥2.

In Figure 3 the results show close clusters of power/control for actors H, FF, BB, N and X. The other actors, while not as central, are still close to the central actors. Actors D, DD and M are considered on the periphery of the management/strategy communication network. Actor DD communicates with Actors B, C and E while Actor D communicates with Actors I and EF, and Actor M communicates with L. Actor T, however, is considered an outlier and outside the management information network grouping.

This analysis clearly indicates that there are distinct central players within the sample in terms of management and strategy related communication, and there are other managerial level individuals that are more on the edges of the communication network or as in the case of “T” outside the communication network.



*Figure 3: Management Communication Network*

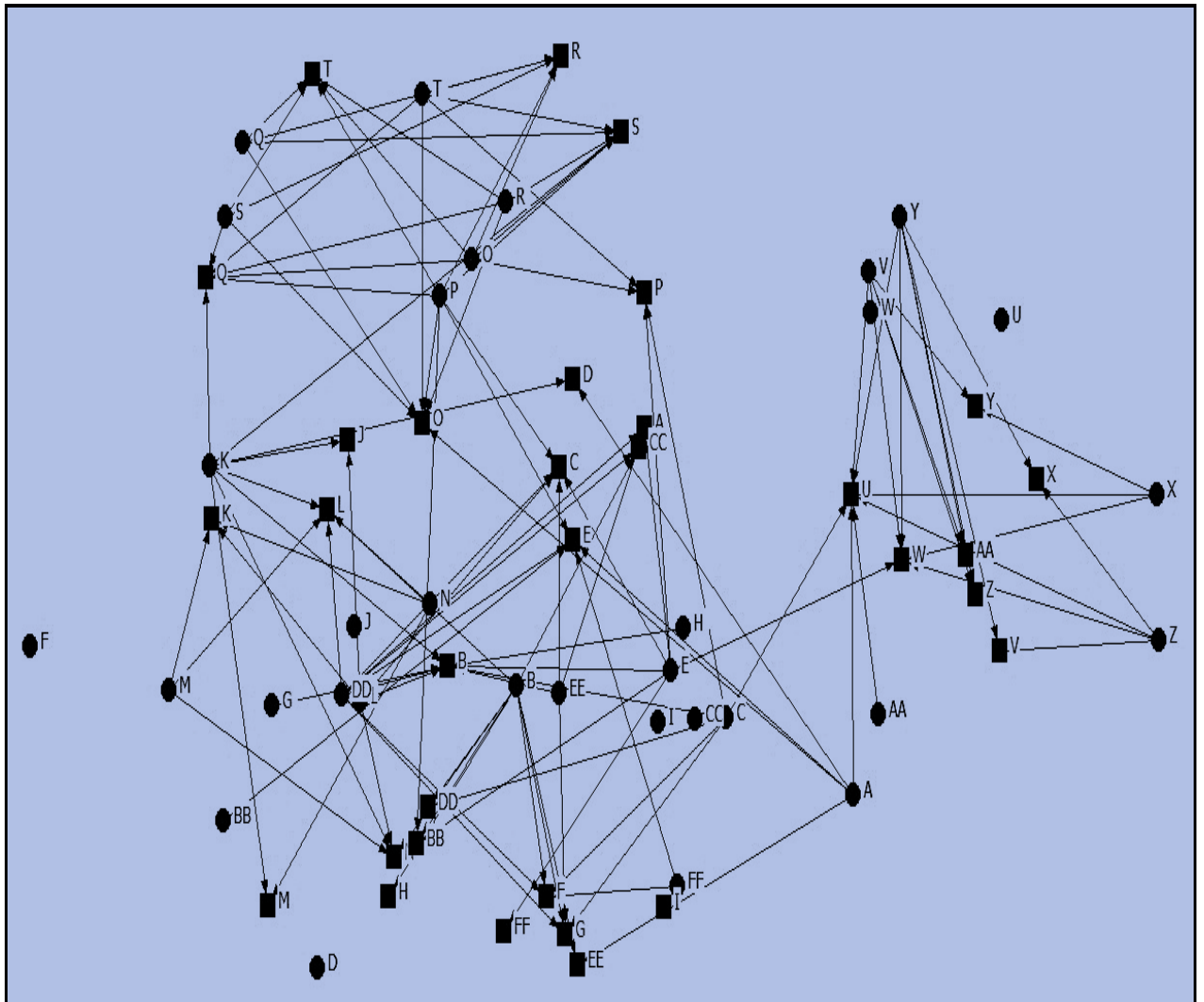
*Operations/Technical Relationships.* Similarly, the objective of examining operations/technical centrality was to gauge how many individual actors or nodes were close to the day-to-day operational or technical flow of information within the organisation. The results are diagrammatically represented in Figure 4 using the UCINET 6.5- NetDraw feature.

The testing for operations centrality was examined by asking respondents “How often do you communicate with the following people on operational/technical issues related to the job?” with each of the individuals identified in the matrix.

Again, for graphing purposes, the data matrix was converted to a 0-1 binary from the five-point Likert questionnaire instrument matrix being a 0 to 4 value, with 0 for response values <2, and 1 for response values ≥2. Figure 4 shows that Actors B, L, O and AA were central to the Operational framework, which may indicate greater workload. This is identified in the diagram by Actors G and BB, who both can be on the periphery of the operations communication network by having contact with Actor DD. The outliers to the Operational network are Actors F, D and U. The outliers are those Actors (or persons) who are isolated from the Operations/technical know-how or communications.

It is interesting to note that some of the management personnel that were outliers within the management/strategy communication network were more engaged in the operations/technology network (for example, manager “T”). Likewise, some actors, such as “U” that appeared central in the management/strategy communication network are far less central in the operations/technical communication network. This type of variation between the two different types of communication is hypothesised under the Conservation of Resources model but will be examined statistically in the structural equation model.





*Figure 4: Operations Communication Network*

*Friendship Relationships.* The research also examines the friendship relationship among the sample. The examination of friendship ties in the sample tested whether there was the existence of bonding relationships within the organisation. The results could also possibly enable senior management to understand whether there were close relationships among the senior management on a social basis which facilitated the building of teams and aided in the fostering of growth.

As with the other two measures, for graphing purposes the data matrix was converted to a 0-1 binary from the five-point Likert questionnaire instrument matrix being a 0 to 4 value, with 0 for response values  $< 2$ , and 1 for response values  $\geq 2$ . From Figure 5, Actors H, DD, EE, CC, L and B appear to have the most central friendships within the sample organisation. Actor L from the diagram, appears most removed from the Friendship Centrality network, followed by Actors F, N, Y, U, T, and Q. The results show that unlike the management and operational network, there are much fewer ties within the network that communicate as “friends”.

Actor H, particularly, appears to have the strongest friendship ties, and this individual is also more centralised than most others in the management/strategy network, but not in the operations network.

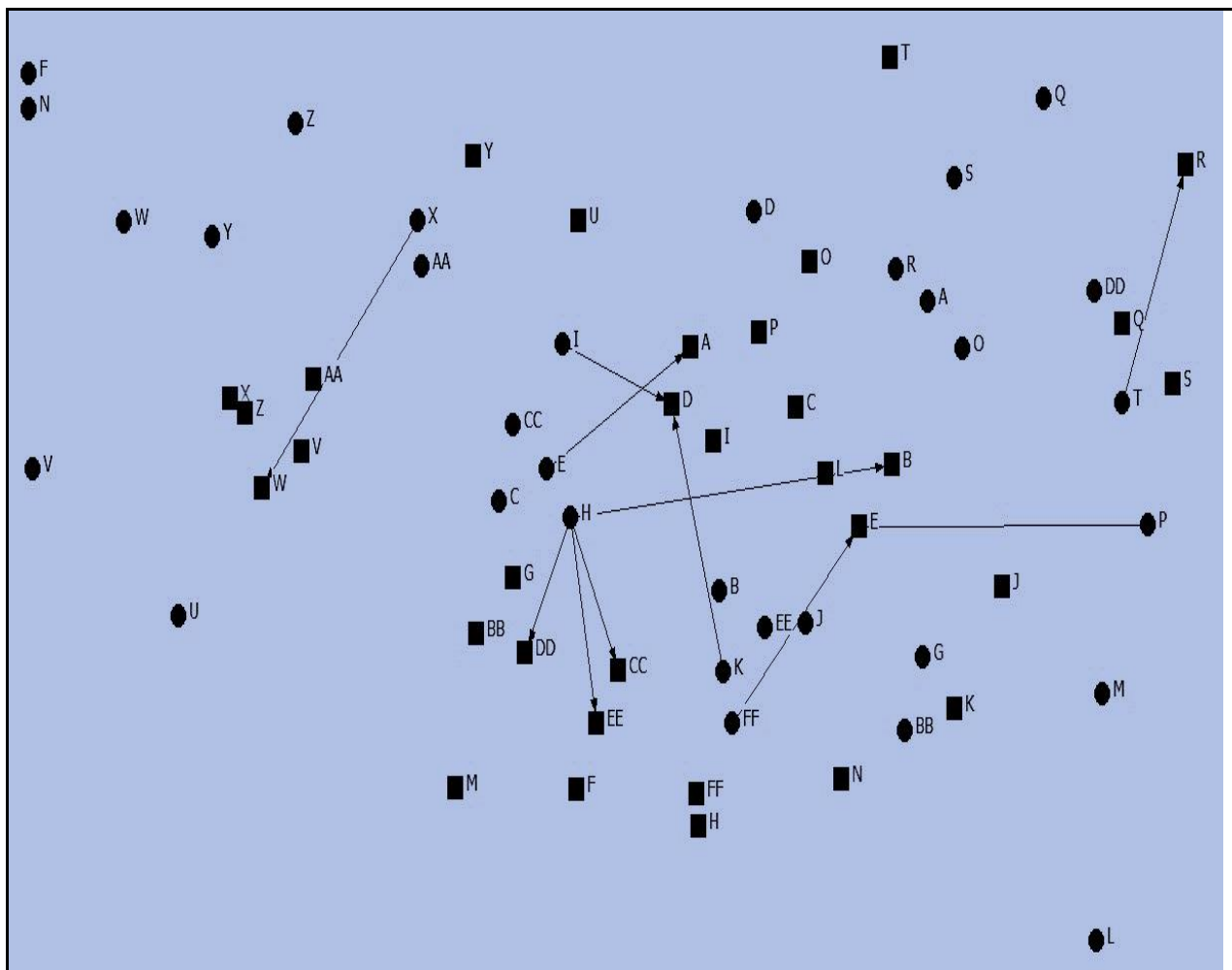


Figure 5: Friendships Communication Network

### 5.3.3. Centrality Measures

Freeman's degree centrality, which indicates how central a network's most central node is relative to other nodes within the network, was used for this study. While, UCINET 6.5 can calculate many measures of centrality, the Freeman's degree centrality measure was used since it best captures the notion of individual power and workload that is examined with the hypotheses.

In the analysis of management/strategy centrality, the research sought to determine the individual's "power" within the network. In contrast, the objective of examining operations/technical centrality was to gauge how many individual actors or nodes were closest to the day-to-day operational or technical flow of information within the organisation. Therefore, with respect to operational/technical information, network centrality relationships likely represent a measure of "workload". The examination of friendship ties in the sample tested whether there was the existence of bonding relationships within the organisation.

Table 9 provides the calculated values for the Freeman's Degree Centrality measures, while Table 10, shows the correlations between the Freeman's Degree Centrality measures for the three different network relationships. A higher centrality score indicates greater centrality. For management centrality, the scores ranged between 0 and 68. For operations centrality, the scores were between 4 and 65, and for friendship centrality the scores were calculated between 0 and 49. While all the correlations between the centrality scores were statistically significant, the correlations do indicate variation between the centralities of the different communication networks as expected.

*Table 9: Descriptive Statistics - Freeman's Centrality Measures*

	N	Range	Mean	Std. Deviation
Friendship Centrality	32	0 to 49	16.44	11.21
Management Centrality	32	0 to 68	35.41	15.66
Operations Centrality	32	4 to 65	35.16	15.77

*Table 10: Correlations- Freeman's Centrality Measures*

	Friend-Centrality	Mgt-Centrality	Ops-Centrality.
Friend-Centrality	1.00	0.41*	0.39*
Mgt-Centrality	0.41*	1.00	0.78**
Ops. -Centrality	0.39*	0.78**	1.00

\*prob <0.10, two-tailed t-statistic, \*\*prob <0.05, two-tailed t-statistic

## 5.4. Hypotheses Testing and Model Estimation

### 5.4.1. Introduction

The previous section provided the descriptive statistics for the variables used in the study. The previous section also reported the Cronbach Alphas for the different scales and sub-scales used in the study, as well as the calculations of network centrality. Section 5.4 examines the various research questions and hypotheses regarding the relationships between work-related burnout, the preferred leadership style of the individual managers, the perception of organisation culture, and social network centrality. A structural equation analysis was used in testing each of the hypotheses. Estimation of the path coefficients and the statistical significance of the path coefficients was accomplished using the SmartPLS 3.1 SEM program.

Chapter 3 described the various research questions and associated hypotheses. The full structural equation model reflecting the hypotheses is shown in Figure 6.

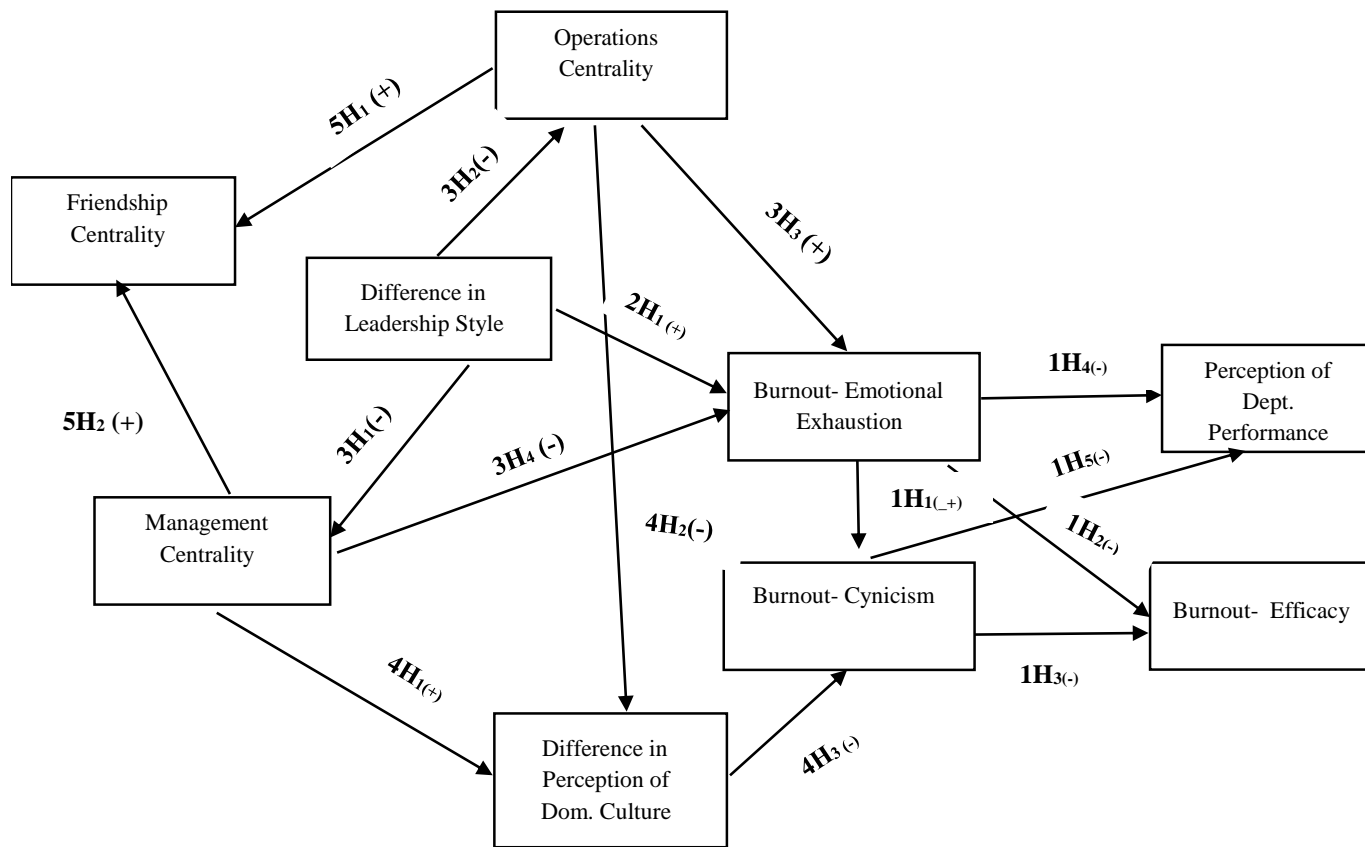


Figure 6: The full structural equation model

The estimation of path coefficients was completed using the SmartPLS 3.1 program path weighting system scheme with a 300-maximum iteration model. Additionally, the statistical significance of the estimated path of the coefficients was obtained using the 'bootstrapping' non-parametric procedure. For the final model, a 5000 sub-sample process with significance set, a  $\text{prob} < 0.10$ , one-tailed level and rounded to two decimal places was used to examine all the paths in the full model. One-tailed testing was conducted since specific relationships were hypothesised. The estimation of the path coefficients is shown in Figure 7.

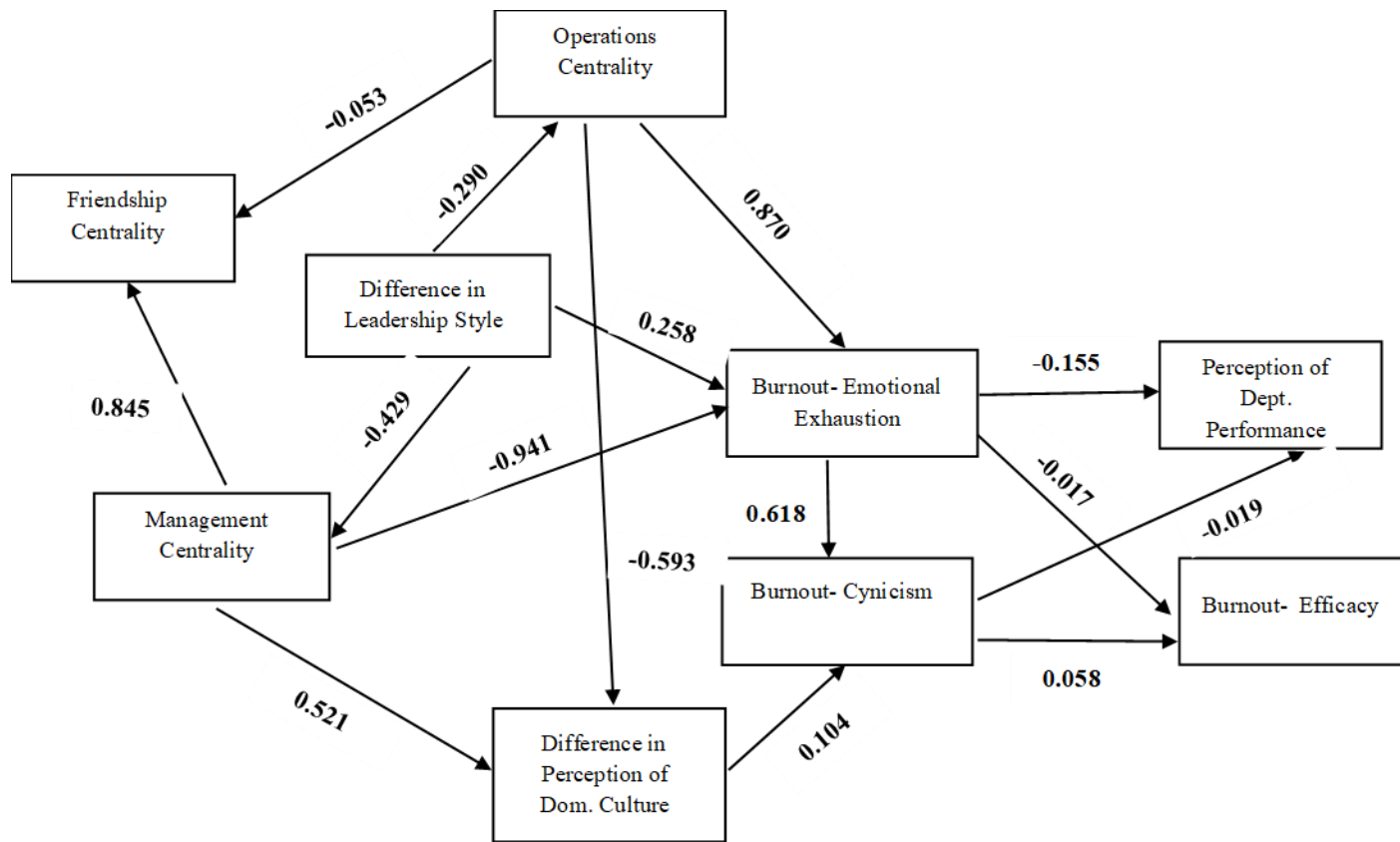


Figure 7: The estimation of path coefficients



#### 5.4.2. Testing Hypotheses Related to Research Question 1

The first research question examines the ‘work-related’ burnout and ‘performance’ link.

**RQ1:** *What is the relationship between the various dimensions of managers’ ‘work-related’ burnout and their perceptions of departmental and personal performance?*

The following variables are used in the model:

Emotional Exhaustion = MBI-GS Emotional Exhaustion sub-scale

Cynicism = MBI-GS Cynicism sub-scale

Professional Personal Efficacy = MBI-GS Professional Personal Efficacy sub-scale, and

Perception of Department Performance = Item #Q81 in the Questionnaire.

The hypothesised relationship between emotional exhaustion and cynicism (Hypothesis: 1H<sub>1</sub>) was supported and statistically significant. The results in the model show that the manager’s emotional exhaustion had an estimated path coefficient of 0.618 to cynicism. This positive relationship between the two measures of work-related burnout is consistent with prior research. The remaining hypotheses examine the relationship between the burnout dimensions and performance. The results, however, do not support these other four hypotheses:

1H<sub>1</sub>: - Higher levels of emotional exhaustion are associated with higher levels of cynicism.

1H<sub>1</sub> is supported with an estimated path coefficient of 0.618, statistically significant at  $prob < 0.01$  (t-test, one-tail).

1H<sub>2</sub>: - Higher levels of emotional exhaustion are associated with lower levels of a manager’s perception of professional personal efficacy. The estimated path coefficient is -0.019, in the hypothesised direction. However, the hypothesis is not supported due to lack of statistical significance.

1H<sub>3</sub>: – Higher levels of cynicism is associated with lower levels of a manager’s perception of professional personal efficacy. The estimated path coefficient of 0.058 is not statistically significant, and opposite from the hypothesised direction. 1H<sub>3</sub> is not supported

1H<sub>4</sub>: - Higher levels of emotional exhaustion is associated with lower levels of an individual's perception of department performance. While the estimated path coefficient of -0.155 is in the hypothesised direction, the hypothesis is not supported due to lack of statistical significance.

1H<sub>5</sub>: - Higher levels of cynicism is associated with lower levels of an individual's perception of department performance. The estimated path coefficient of -0.017 is in the hypothesised direction, however the hypothesis is not supported due to lack of statistical significance.

#### *5.4.3. Testing Hypotheses Related to Research Question 2*

The second research question examines the relationship between 'leadership style' and 'work-related' burnout. To examine this a new variable was used. Because the hypothesis focuses on the difference in leadership style a manager has from the leadership styles of the senior management, and the relationship this has upon on work-related burnout, a 'leadership style difference' variable, using the "transformational leadership - inspirational motivation" sub-scale, was created. As discussed earlier, the leadership – inspiration motivation sub-scale was used for the new variable since it is the leadership dimension of greatest interest under the COR framework as well as being the only transformational leadership sub-scale associated with the MLQ-5x that had an acceptable Cronbach Alpha (> 0.75)

This transformed sub-scale was the absolute value derived from the difference between an individual manager's score on the "transformational leadership - inspirational motivation" sub-scale and the average "transformational leadership - inspirational motivation" scores of the top four executives of the sample (the 'senior management team'). Given the requirements for anonymity, this transformed variable was created by the supervisor in adherence to stated Research Ethics protocol.

The new variable, "Difference in personal leadership style - Inspirational Motivation" therefore resulted in a measure of how distant an individual personal leadership style was from senior management's personal leadership style with respect to the transformational leadership dimension of inspirational motivation. This new variable was used in the model.

**2H<sub>1</sub>:** Greater differences between a manager's personal leadership style and the leadership style of the senior management are associated with higher levels of emotional exhaustion. The hypothesis was supported with an estimated path coefficient of 0.258, statistically significant at  $prob < 0.10$  (t-test, one-tail).

#### 5.4.4. Testing Hypotheses Related to Research Question 3

The third research question examines the link between the social relationships that exist within the organisation (social network) and a manager's "leadership style". The following new latent variables were used in the model.

Management Centrality = Freeman's degree centrality for strategy/management communication.

Operations Centrality = Freeman's degree centrality for operations/technical communication.

The two hypotheses under this research question represent 'withdrawal coping' hypotheses under the Conservation of Resources model.

**3H<sub>1</sub>:** Greater differences between a manager's personal leadership style and the leadership style of senior management leads to lower levels of centrality within the organisation's management social network. The path between "Difference in Personal Leadership - Inspirational Motivation" and management centrality, has an estimated negative path coefficient value of  $-0.429$  and is statistically supported at  $prob < 0.01$  (t-test, one-tail). This hypothesis is therefore supported.

**3H<sub>2</sub>:** Greater differences between a manager's personal leadership style and the leadership style of senior management leads to lower levels of centrality within the organisation's operations social network. The path between "Difference in personal leadership - Inspirational Motivation" and operations centrality has a negative path coefficient value of  $-0.290$  and is statistically supported at  $prob < 0.01$  (t-test, one-tail). This hypothesis is therefore supported.

The third hypothesis under Research Question 3 represents a ‘workload’ argument under the Conservation of Resources model.

**3H3:** Higher centrality in the operations or technical-related communication network is associated with higher levels of emotional exhaustion. The relationship between operations centrality and emotional exhaustion has an estimated path coefficient of 0.870 and is statistically supported at  $prob < 0.01$  (t-test, one-tail). This hypothesis is therefore supported.

The fourth hypothesis under this research question represents a power argument. Since power implies reduced personal resource use, it therefore should result in less stress and ‘burnout’.

**3H4:** Higher centrality in the management/strategy communication network is associated with lower levels of emotional exhaustion. The path between management centrality and emotional exhaustion has an estimated path coefficient value of -0.941 and is statistically supported at  $prob < 0.01$  (t-test, one-tail). This hypothesis is therefore supported.

#### *5.4.5. Testing Hypotheses Related to Research Question 4*

The fourth research question examines the relationship between organisation culture and social relationships. The argument here is that a manager’s perception of organisation culture is influenced by his or her interactions within that organisation. A person’s perception of the true ‘dominant’ organisation culture requires broad contact and interactions within the organisation.

From the previous section, based upon the OCAI four-dimension scale of culture, the dominant culture of the sample organisation (highest average value between the four OCAI dimensions for the full network sample) is the ‘Market’ oriented culture. To test these hypotheses, a new variable was created for the model (Difference in perception of dominant culture-Market). The latent variable created was based on the difference between an individual’s score on the OCAI - Market Culture sub-scale and the organisation’s overall score on the OCAI - Market Culture sub-scale.

The result was an individual's 'distance' or 'variation' from the organisation's norm on the OCAI - Market sub-scale, that is, how far from the norm perception of the dominant culture is the individual's perception of the dominant culture.

The variable "Difference in perception of dominant culture – Market" = the absolute value of the difference between the individual and sample average OCAI - Market sub-scale score.

Since the number of contacts within an organisation can come from centrality in either the decision- making network or the daily, operations-related network, this research question results in the first two hypotheses:

**4H<sub>1</sub>:** Higher centrality in the management communication network is associated with less diversity in perception of "dominant" organisation culture. The path coefficient for this hypothesis has a positive coefficient value of 0.521, opposite from the hypothesised direction and is statistically significant ( $prob < 0.10$ , assuming a two-tailed test, since opposite from hypothesised direction). Hypothesis 4H<sub>1</sub> is therefore not supported, but this finding raises an interesting issue that will be discussed below.

**4H<sub>2</sub>:** Higher centrality in the daily, operations-related communication network is associated with less diversity in perception of "dominant" organisation culture. The path coefficient for this hypothesis is in the hypothesised direction at -0.593 and is statistically significant ( $prob < 0.05$ ). Hypotheses 3H<sub>2</sub> is supported.

A possible interpretation of the combined results from Hypotheses 4H<sub>1</sub> and 4H<sub>2</sub> is that while centralisation within the everyday "operations/technical" work environment seems to lead to a good sense of the dominant organisation culture, centralisation or power within the strategy/management communication network appears to have the opposite effect. When these findings are considered together it may indicate that more senior management (which would be most likely to have higher strategy/management centralisation) may either be "fooling" themselves by projecting their managerial "cultural hopes/preferences" or they may simply not be receiving the most accurate information about the real organisational culture from their communication contacts. However, communication ties and centralisation related to daily,

operational related work activities appear to result in a more accurate understanding of the general culture as perceived by most employees.

To expand on this interpretation, analysing the top 20% (n=7) of the sample with the highest management centrality measure indicates that these managers see the dominant organisational culture as a “clan” culture (average OCAI “clan” score = 2.86, highest score of the four OCAI dimensions), whereas the remaining 80% with lower management centrality perceive the organisation much less as a “clan” (OCAI “clan” score = 2.53) and more of a “market” orientation (OCAI “market” score = 2.87, highest score of the four OCAI dimensions). Thus, managers with high management centrality generally saw the culture as “an extended family organism and a place where there is high interaction between and amongst individuals, participation, trust, openness and loyalty” (Clan culture) whereas the rest of the organisation saw the dominant culture as “competitive, market and results-driven and hitting stretch targets” (Market culture).

The third hypotheses under this research question ties organisation culture to burnout. The argument is that a manager that views the organisation culture as different from the majority of other managers (the dominant strategy), is likely to become more cynical in nature, that is developing a more impersonal and distant attitude (similar to an ‘emotional resignation’ coping strategy).

**4H<sub>3</sub>:** Greater diversity in perception of “dominant” organisation culture is associated with higher levels of cynicism. The estimated path coefficient is 0.104. While in the hypothesised direction, it is not statistically significant. This hypothesis is therefore not supported.

#### 5.4.6. *Testing Hypotheses Related to Research Question 5*

Friendships are often seen as vehicle to mitigate work-related stress and burnout. The fifth research question explores the relationship between friendship networks and work-related networks. Two hypotheses are offered.

**5H<sub>1</sub>:** Higher centrality in the management work-related social network is associated with higher centrality in the friendship network. The path coefficient associated with hypothesis

5H<sub>1</sub> has an estimated path coefficient of 0.845. The estimated path coefficient between management centrality and friendship centrality is in the hypothesised direction, and is statistically significant ( $prob < 0.01$ , t-test, one tailed). The hypothesis is therefore supported

**5H<sub>2</sub>:** Higher centrality in the operations work-related social network is associated with higher centrality in the friendship network. The estimated path coefficient is -0.053, which is not statistically significant. This hypothesis is not supported.

#### *5.4.7. Summary of Hypotheses Testing and Model Fit*

As previously discussed, the foundation of the present research is to examine the impacts that leadership style, organisational culture, and social relationships have upon work-related burnout, and thus performance in an integrated manner. This resulted in five research questions and a number of hypotheses. Table 11 provides a summary of the various hypotheses examined in the structural equation model.

Table 11: Summary of Hypotheses examined by structural model

<u>Hypotheses</u>	<u>Path Coefficient</u>	<u>Hypothesis Result</u>
1H <sub>1</sub> : Emotional Exhaustion → Cynicism	0.618***	Supported
1H <sub>2</sub> : Emotional Exhaustion → Efficacy	-0.017	Not Supported
1H <sub>3</sub> : Cynicism → Efficacy	0.058	Not Supported
1H <sub>4</sub> : Emotional Exhaustion → Dept. Performance	-0.155	Not Supported
1H <sub>5</sub> : Cynicism → Dept. Performance	-0.019	Not Supported
2H <sub>1</sub> : Difference Leadership Style → Emotional Exhaustion	0.258*	Supported
3H <sub>1</sub> : Difference Leadership Style → Management Centrality	-0.429***	Supported
3H <sub>2</sub> : Difference Leadership Style → Operations Centrality	-0.290***	Supported
3H <sub>3</sub> : Operations Centrality → Emotional Exhaustion	0.870***	Supported
3H <sub>4</sub> : Management Centrality → Emotional Exhaustion	-0.941***	Supported
4H <sub>1</sub> : Management Centrality → Diff Perception Dominant Culture	0.521*	Not Supported <sup>1</sup>
4H <sub>2</sub> : Operations Centrality → Diff Perception Dominant Culture	-0.593**	Supported
4H <sub>3</sub> : Diff Perception Dominant Culture → Cynicism	0.104	Not Supported
5H <sub>1</sub> : Operations Centrality → Friendship Centrality	-0.053	Not Supported
5H <sub>2</sub> : Management Centrality → Friendship Centrality	0.845***	Supported
<sup>1</sup> Alternate explanation is offered *= <i>prob</i> <0.10 (one tailed. t-test) **= <i>prob</i> <0.05 (one tailed. t-test) ***= <i>prob</i> <0.01 (one tailed. t-test)		



Table 12 presents the summarised statistical report of the structural model produced in SmartPLS 3.1 using the boot-strapping, non-parametric method (5,000 sub-samples).

*Table 12: Summary Statistics- Structural Model*

Path	Coefficient	Standard Error	T-Statistic	P-Values
Cynicism > Perception of Department Performance	-0.019	0.22	0.80	0.21
Difference in Personal Leadership- Inspirational Motivation >Emotional Exhaustion	0.258	0.17	1.50	0.07
Difference in Personal Leadership -Inspirational Motivation >Management Centrality	-0.429	0.14	3.06	0.00
Difference in Personal Leadership- Inspirational Motivation > Operations Centrality	-0.290	0.13	2.19	0.01
Emotional Exhaustion>Cynicism	0.618	0.10	5.68	0.00
Emotional Exhaustion>Perception of Department Performance	-0.155	0.25	0.63	0.27
Management Centrality>Friendship Centrality	0.845	0.21	4.00	0.00
Operations Centrality> Friendship Centrality	-0.053	0.22	0.24	0.41
Difference in Perception of “Dominant” Culture > Cynicism	0.104	0.16	.063	0.21
Management Centrality > Emotional Exhaustion	-0.941	0.31	2.94	0.00
Management Centrality >Difference in Perception of “Dominant” Culture	0.521	0.34	1.50	0.07
Operations Centrality > Emotional Exhaustion	0.870	0.29	3.00	0.00
Operations Centrality > Difference in Perception of “Dominant” Culture	-0.593	0.29	2.04	0.02

Assessing the final model involved several steps. First, assessing for excessive multicollinearity in the model involved estimating the “Variance Inflation Factor” (VIF) which indicates potential multicollinearity. Generally, VIFs over 5.0 indicate potentially multicollinearity (Hair et al. 2014). VIFs within the final model illustrated in Figure 5 ranged between 1.001 and 4.795. Thus, multicollinearity was not seen as an issue for the coefficient estimation process.

The second step involved assessing for model significance and relevance of the relationships. In keeping with the guidelines outlined by Hair et al. (2014, p.169), in place of the chi-square goodness of fit, “PLS-SEM determination of the *“goodness of fit”* is based on the *“heuristic criteria”* and specifies the model in terms of how well it predicts the endogenous variables or constructs.” All the statistically significant relationships were in the hypothesised direction (except the management centrality-perception of dominant culture link, which had an alternate explanation), and the statistical significance of the estimated path coefficients were generally high. Nine path coefficients were statistically significant (probability <0.10, t-test, one tailed level) and six of the path coefficients were statistically significant at the probability <0.01. Only four paths in the final model were not statistically significant, with two of the non-significant paths predicting department performance (but were still in the hypothesised direction). The path coefficient relating culture to cynicism was also in the hypothesised direction although not statistically significant.

The major construct of interest in this study was work-related burnout. All three path coefficients into the emotional exhaustion variable were statistically significant, with two being statistically significant at probability <0.01 (t-test, one tailed). Additionally, the three variables predicting emotional exhaustion all fit well in the ‘Conservation of Resource’ argument and represent three distinct hypotheses. In terms of relevance, the size of the path coefficient indicated prediction power. From Figure 5, the centrality measures of management information and operational information, with path coefficients of -0.94 and 0.87 respectively, were much stronger predictors of emotional exhaustion than differences in personal leadership with a path coefficient of 0.26.

The ‘size of the effect’ measured the impact of a predictor variable on the endogenous variable. In SmartPLS, this is done by examining the change in the amount of variance explained by the predictors when one of the predictor variables was eliminated. This is called the  $f^2$ .

Using Cohen’s (1988) classification of effect sizes based upon variance explained, predictors with large effects ( $f^2 > 0.35$ ) were ‘emotional exhaustion to cynicism’ and the ‘management centrality to friendship centrality’. Predictors with moderate effects ( $f^2$  between 0.15 and 0.35) were ‘difference in leadership style to management centrality’, ‘management centrality to emotional exhaustion’, and ‘operations centrality to emotional exhaustion.’

The third step was to assess for overall model predictive relevance, or the ability to accurately predict data points. First, the  $R^2$  associated with the primary variables of interest in this study, work-related burnout, was relatively high. The structural model indicates an  $R^2$  of 0.367 for the primary burnout dimension of emotional exhaustion, which means that 37% of the variation in the sample’s emotional exhaustion measure can be explained by the variables within the final model. Also, the structural model also indicated an  $R^2$  of 0.382, or 38.2% for the burnout dimension of cynicism. Secondly, SmartPLS uses the Stone-Geiser’s  $Q^2$  measure for this analysis and  $Q^2$  values greater than zero indicate predictive value. Hair (et al. 2014) suggests that  $Q^2$  values = 0.35 are large, =0.15 is medium, and =0.02 is small.  $Q^2$  values less than zero indicate a lack of predictive power. The largest  $Q^2$  values ( $Q^2 > 0.15$ ) were associated with the emotional exhaustion, cynicism, friendship centrality, and management centrality. However, all (except Perception of Dominant Culture – ‘Market’, which has a  $Q^2 = -0.03$ ) of the  $Q^2$  values are above zero, indicating the final model’s predictive relevance.

#### 5.4.8. Regression Analysis: Emotional Exhaustion

In the final structural equation model, there are three paths hypothesised to the burnout sub-factor of emotional exhaustion. These direct relationships are particularly interesting since emotional exhaustion is generally considered the primary component of burnout under the Conservation of Resource approach and the three variables hypothesised to directly influence emotional exhaustion include two centrality measures, which are hypothesised to have opposite impacts on emotional exhaustion under the COR model, and the element of differences in leadership style.

A regression analysis along these dimensions also allows for a validation check on the SEM results for these direct causal links. These direct relationships are captured by three hypotheses (2H<sub>1</sub>, 3H<sub>3</sub>, and 3H<sub>4</sub>).

**2H<sub>1</sub>:** Greater differences between a manager's personal leadership style and the leadership style of the senior management are associated with higher levels of emotional exhaustion.

**3H<sub>3</sub>:** Higher centrality in the operations or technical-related communication network is associated with higher levels of emotional exhaustion.

**3H<sub>4</sub>:** Higher centrality in the management communication network is associated with lower levels of emotional exhaustion.

Table 13 provides the results of the OLS regression model using emotional exhaustion as the dependent variable, and operations/technical centrality, management/strategy centrality, and difference in leadership style (transformational – inspiration motivation) as the predictor, independent variables. Estimation of the regression model used SPSS (version 21).

Table 13: Emotional Exhaustion Regression

Variables	Coefficient	VIF	Hypothesis	Support
Constant	0.437			
Operations Centrality	0.086***	1.26	3H <sub>3</sub> (+)	supported
Management Centrality	-0.067***	4.70	3H <sub>4</sub> (-)	supported
Delta Leadership - Motivation	0.812*	4.19	2H <sub>1</sub> (+)	supported
N	32			
R <sup>2</sup>	0.367			
* <i>prob</i> <0.10; ** <i>prob</i> <0.05, *** <i>prob</i> <0.01, 1-tailed, t-test				

The regression model resulted in statistically significant estimated coefficients on the three independent variables, all in the hypothesised direction. The model accounts for 36.7% of the variation in emotional exhaustion. The VIFs for the regression model are all under 5.0 indicating little multi-collinearity problems. The results of the regression model are very similar to the results obtained from the PLS-SEM estimated structural equation model (the part of the full structural equation model that examines the direct paths into emotional exhaustion) and therefore provides a positive validation check on the SEM results.

## **Chapter 6: Discussion and Conclusions**

### **6.1. Introduction**

This chapter summarises the important findings of the current research and discusses the implications of the findings. This chapter presents: i) a summary of the research findings and alignment to the overall research hypothesis within the context of the Conservation of Resources model, ii) a discussion of the theoretical implications of the research, iii) an overview of the implications for management practice, iv) a discussion of limitations of the study, and v) conclusions and recommendations for future study.

### **6.2. Revisiting the Research**

The present research is grounded in the Conservation of Resources (COR) theory which seeks to understand and explain why individuals work to mitigate against the expenditure of personal resources (emotional, physical, and financial), and how the expenditure of personal resources ultimately leads to work-related burnout and various coping strategies. Within this theoretical context, the study examines many research questions and formal hypotheses associated with how an individual manager's preferred leadership style, differences in the perception of organisation culture, and social network centrality are all associated in various ways with an individual's expenditure of personal resources, and therefore influence what strategies an individual might pursue within an organisation, and how these affect a person's level of work-related burnout. While work-related burnout is an important issue, and has been examined extensively in the literature, there are no known published empirical research studies that examine the relationships among all these factors in combination. In addition, there are few studies of work-related burnout using samples from the Caribbean region.

An important part of the research is understanding the impact that communication networks have upon these relationships within an organisation. Measuring these types of social network relationships in detail presents difficult sampling problems. The full network sampling method, or 100% of the target population, is considered the best method to obtain accurate measures of network relationships.

Because of this, a full network sampling, that is (100%) of all the managers within the sample organisation (an important IT group of companies within Trinidad and Tobago) was adopted for this research.

Three different types of communication were investigated - strategy/management communication, operations/technical communication, and friendship communication. Network centrality was the measure used. Network centrality is often referred to as a measure of power within a network, but it can also represent a measure of workload, particularly when dealing with operational or technical level communication. Both power and workload have implications regarding the need of personal resource expenditures --a key component of the Conservation of Resource approach to understanding burnout. The centrality of individual actors (Freeman's degree centrality) was determined using the UCINET-6.5) software.

The research instrument was a customised pen and paper questionnaire using well-known, reliable and validated research instruments. The instruments used in the research were the Maslach Burnout Inventory (MBI-GS), the Multifactor Leadership Questionnaire (MLQ-5x short), and the Organisational Cultural Assessment Instrument (OCAI).

Five research questions were posed, each with one or more testable hypotheses. The research questions were designed to facilitate the construction of a predictive/causal structural equation model guided by the Conservation of Resources approach. The individual hypotheses were examined by the estimated coefficients along the hypothesised path relationships. Path coefficients were estimated using the Partial Least Squared approach to structural equation modelling (PLS-SEM).

### **6.3. Theoretical Implications**

While the structural equation modelling identified many interesting relationships, a few results stand out.

First, the three variables indicating, i) how central a manager is within the strategy/management communication network (a power measure), ii) how central a manager is within the operational/technical communication network (a workload measure), and iii) how different a manager's personal leadership style is from the senior management team's

leadership style together explain approximately 38% (R-square) of the variation of emotional exhaustion within the sample.

While no previous research has empirically examined these dimensions in combination, these social network related findings are consistent with the many prior studies. For example, Gill's et al. (2006) found that, "that the degree of perceived 'burnout' was related to the degree of perceived stress and similarly the type of management leadership" (Gill et al. 2006, p. 469). Centrality within the strategy or management decision-making network is generally associated with power, which under the COR theory should result in reduced burnout levels since managers have various strategies available to reduce the expenditure of personal resources when in a strong managerial power situation. In the present study, the results support this hypothesis. Higher levels of management/strategy centrality are associated with lower levels of emotional exhaustion. However, centrality within the everyday operations or technical network is probably an indication of workload, and thus should be positively related to burnout since workload is directly associated with personal resource expenditure. This relationship was also found to be statistically significant in the present research.

The impact of both managerial decision-making power and workload on the emotional exhaustion dimension of work-related burnout is consistent with both Llorens et al.'s (2006) discussion of the relationship between job demand and emotional exhaustion and Maslach et al.'s (2001) argument that burnout is higher among people who have an external locus of control (attributing to events and achievement to powerful others or to chance) rather than an internal locus of control which is attributable to the individual's own ability and efforts.

This study, however, is the only study that formally measures these two types of network centrality within a full-sample population, and empirically investigate their relationship to work-related burnout.

Second, an interesting component of the present research is investigating the impact that a manager's personal transformational leadership style has upon both work-related burnout and that manager's position within the network. It was hypothesised that a subordinate manager with a different transformational leadership style from senior management's is likely to become frustrated, and thus need to expend greater personal resources to work within the



organisation. This, in turn, should result in higher levels of burnout. But managers can also develop coping strategies in this situation. Under the Conservation of Resource framework coping strategies are particularly important in explaining organisational behaviours. In other words, when confronted with the potential loss or expenditure of personal resources, individuals may explore various coping strategies that are designed to reduce these expenditures. When the subordinate manager's leadership styles are different from senior management's leadership style, for example, the affected subordinate manager might develop a coping strategy of 'withdrawal', such as reducing communication contacts within the organisation. These hypothesised relationships were all supported in the present research.

Third, another important finding of interest was related to perception of organisation culture. Perception of an organisation's dominant culture should become easier, or more accurate, given the more communication ties or centrality an individual has within the organisation. The present research found this to be true as hypothesised, but only for everyday operations and technical-related centrality. In fact, the opposite relationship was found for management centrality (which was opposite from the original hypothesis). However, when these findings were considered together, an interesting explanation might be offered. This relationship could suggest that more senior management (which would be most likely to have higher strategy/management centralisation) may either be 'fooling' themselves by projecting their managerial 'cultural hopes/preferences' as the actual 'dominant' culture, or they may simply not be receiving the most accurate information about cultural perceptions from their subordinate communication contacts (the 'yes man' phenomenon). However, communication ties and centralisation related to daily, operational-related work activities appear to result in a more accurate understanding of the general or dominant culture as perceived by most of the employees.

This alternative explanation was supported even more when examining the opinion of the dominant culture by the top 20% of managers with the highest management/strategy centrality. These actors with high management/strategy centrality shared an opinion that the dominant culture was 'clan-like' (OCAI label) or an extended a family-like organisation culture.

However, the remaining 80% of managers with lower centrality in the management/strategy network saw the dominant culture as a competitive, market and results-driven orientation. The perception of the organisation's culture was significantly different between senior and lower level managers.

The final major finding appears to be that emotional exhaustion was the principal driver of work-related burnout, a finding consistent with Alarcon's (2011) meta-analysis. The emotional exhaustion dimension explains a large percentage of the variance in the burnout dimension of cynicism. Given the relationships described above, this also suggests that management centrality, operations centrality and differences in transformational leadership style can also indirectly impact cynicism through the emotional exhaustion dimension.

#### **6.4. Additional Considerations from the Study's Findings**

The findings from the research, however, did suggest some additional insights and considerations. In particular:

1. It was hypothesised that under the Conservation of Resources theory that differences between senior manager's leadership and that of staff would directly contribute to high level of burnout. While this hypothesis was supported, the largest contributor to emotional exhaustion (fitting within the Conservation of Resources theory) was the impact of the two centrality measures. And since the differences between senior manager's leadership and that of the subordinate managers also impact network centrality (as coping strategies) it is apparent that there are both direct and indirect impacts of leadership style on burnout.

2. It was hypothesised that burnout would have a negative impact on an individual's perception of department performance. However, the estimated coefficients on these relationships, while in the hypothesised direction, were not statistically significant. As prior studies have suggested, the measure of performance in burnout studies may be difficult to capture. Additional research needs to explore this relationship of burnout and performance.
3. Perception of Organisational Culture. Prior research has suggested that the organisation takes shape and pattern from its leaders who determine the organisation culture (see La Guerre and Bissessar 2009). In this study, the implications and findings suggest that while the four senior managers perceived the dominant culture as a Clan Culture, the rest of the organisation judged the dominant culture to be a Market Oriented Culture. Taken together, this suggests that senior management is either projecting their "desired" culture into their perceptions, or they are getting different or biased information from their network connections within the organisation. This interesting finding is somewhat consistent with the findings of Zamini et al. (2011) on the disparity between senior leaders and staff and underlines the need for additional research in this area.

## **6.5. Implications for Management Practice**

The research also has important implications for management practice. The following implications from the research have been identified as key areas for management action and practice:

### *6.5.1. Precise Information for Remedial Action*

Conducting a formal social network analysis on the entire network of managers and senior management relationships could enable senior management to pin-point actual actors within their network. This might allow senior managers to see how employees fit in the 'scheme' of things and create the opportunity to make actual adjustments.

For example, if a subordinate manager is hired based on their skill set, and that person is found to be an outlier to the operational (technical) related network, this can be extremely problematic to an organisation about to be embarking in a cultural ‘change’ process. The skills of that manager may not be effectively utilised until that person is brought into a more connected position within the organisational communication network. Additionally, those managers who are highly central to the operational related technical network need to be carefully reviewed to ensure that there is effective delegation of tasks and smoothing of responsibilities to minimise resource depletion, and burnout. As seen from this research, these types of subtle managerial processes are much easier to identify within a formal social network analysis.

#### 6.5.2. *Potential Risk of Depleted Human and Intellectual Capability*

Senior managers need to consider the implications of how employees manage their personal resources. The organisation may run the risk of depleted key human resources from creating too many ‘technocrats’ or highly-centralised individuals within the everyday operational work environment or from simple work-load fatigue. This research indicated that high centrality in operations networks appear to create significantly higher levels of emotional exhaustion, and subsequently cynicism.

In these cases, there is a high likelihood of the organisation experiencing:

- i) a high turnover and related training/replacement costs – to recapture and replace skill and technical know-how,
- ii) permanent losses of know-how and experience, where there are no substitutes for the skill/intellectual capacity, and
- iii) the inability of the organisation to rapidly proceed in new product development, innovation or new market growth within the envisaged timeline – all resulting in burnout that may stem from having managers in high work-load, centralised positions.

The present study found that operational centrality was a significant predictor of a manager’s emotional exhaustion. Managing this relationship between network centrality (workload) and burnout within the overall management team is a critical issue for senior management.

### 6.5.3. *Hiring the Right Leaders*

Another risk is the problem of hiring a new senior leadership team whose individual leadership styles and personalities may differ dramatically from other managers. In fact, many new CEOs are brought into an organisation specifically as “change agents” – but this may have an unanticipated downside. This ‘unanticipated downside’ could result in a variety of problems such as subordinate managers developing non-productive coping strategies and/or increasing the levels of work-related burnout. This, in turn, can have financial implications such as talent acquisition costs, resource losses, time to replace individuals or challenge in encouraging cooperation among the rest of the team who may be resilient to the change process, and reputational risk to the organisation (corporate image).

The present study specifically examined this issue and found that significant differences in transformational leadership styles between senior management and other subordinate managers can lead to not only higher levels of emotional exhaustion, but also results in withdrawal coping strategies where some managers with different leadership orientations are unwilling to interact or communicate frequently with the senior management team, and thus withdraw from the communication network. The organisation needs to carefully consider hiring managers, both lower level and senior level, which fit well within the overall organisation’s leadership styles and orientation.

In addition, organisations need to perhaps develop training, retention and repositioning strategies for managers that have different leadership styles from the executive management to keep their skills and expertise within the organisation, and in a capacity where it is complementary to the overall benefit of its goals or design training strategies to bring these individuals with differing leadership personalities back into the fold.

#### *6.5.4. Low Effectiveness of an “Emotionally Exhausted” Management Team*

Many factors can lead to emotional exhaustion. Emotionally exhausted managers will then lead to eventual depersonalisation, and ultimately cynicism. In fact, the present research indicates that approximately 38% of the variation in cynicism is explained by a manager’s emotional exhaustion. Cynicism in turn, can result in lower productivity and performance, both individual and departmental, as well as lower levels of engagement.

The leading indicators of cynicism may be the symptoms that managers display during periods of emotional exhaustion or prior, such as withdrawal from the work-related social network as found in the present study.

While this study did not produce statistically significant results connecting burnout to perception of department performance, the results were in the hypothesised direction. It is therefore critical for senior management to develop and monitor early predictors and indicators of emotional exhaustion within the workforce, and then develop quality of work life strategies and avenues to de-stress and remained engaged and innovative.

#### *6.5.5. Understanding the True Dominant Organisational Culture*

The present study examined whether higher centrality in the workplace communication networks was associated with a more accurate perception of the “dominant” organisation culture. While this hypothesised relationship held true for centrality within the operational and technical communication network, the results for centrality in the strategy and management communication indicated a strong, and statistically significant finding that was opposite from the hypothesised direction.

As previously discussed, when these findings are considered together, it may indicate that more senior management may either be projecting their cultural biases onto the whole organisation, or they may simply be receiving inaccurate information about the organisational culture from their managerial communications.

The finding is that communication ties and centralisation related to daily, operational related work activities, appear to result in a more accurate understanding of the general culture as perceived by most the employees and suggests an important strategy for senior management.

Firstly, senior management needs to be cautious about the information they are receiving within their managerial-oriented communications about the cultural conditions of their organisation. Secondly, senior management need to sometimes immerse or integrate themselves into the daily operational and technical communication network (sometimes referred to as “management by walking-around” or MBWA), to receive a balanced point of view about how employees perceive the organisation’s culture.

## **6.6. Limitations**

The limitations of the research are varied and consist of the following:

- i) Sample size - The size of the sample is relatively small ( $n=32$ ) and limited to only one sample organisation. While both the sample size and use of a single target organisation are typical for primary, questionnaire-based full-sample empirical studies of social and communication networks, smaller sample sizes always raise issues of generalisation. For example, given the use of a single company sample in one broad industry sector, although three different subsidiaries were included in the study, the ability to generalise the findings of this study to other industry sectors may be limited.
- ii) Geographic market – The research is limited to the Trinidad and Tobago telecommunications market only and does not consider the aspect of burnout in the broader Caribbean region, and more specifically, to regions outside the English-speaking Caribbean region.
- iii) The research uses single item measures. Although the single item measures are sub-scales derived from well-developed, valid and reliable instruments, other than investigating the Cronbach Alphas, the research did not investigate the specific contribution of the individual items in each scale to the latent variables. This was partly since the research used both transformed variables (the difference variables) and single-item measures of network centrality.

- iv) An assessment of ‘performance’ was limited to the two questions in the instrument, Q81 and Q82, both requiring perceptual feedback from the individual manager. Only Q81 was used in the final model since no significant findings could be obtained from Q82. No objective measure of performance or success was obtained for the study.
- v) Calculation of leadership style was limited to only one sub-scale - “transformation leadership-inspiration motivation” since the other MLQ-5x constructs that measure transformation leadership did not fall within the acceptable Cronbach Alphas used in this study ( $>0.75$ ). Fortunately, the transformation leadership-inspirational motivation sub-scale was a sub-scale of primary importance to this research.
- vi) Due to the nature of Partial Least Squares (PLS) Structural Equation Modelling, it is difficult to examine overall model “goodness of fit” measures such as those seen in CB-SEM programs like LISERAL or AMOS. Goodness of fit for PLS must be interpreted from several different statistics. However, in the present research the combination of these different statistics suggest that the final estimated model has a relatively good fit to the data.

## **6.6. Conclusions and Recommendations**

The research provides strong evidence supporting the Conservation of Resources (COR) approach to understanding work-related burnout in the context of leadership style, organisation culture and social network relationships within an organisation. The research evidence shows that there was strong predictive reliability of the structural model with statistically significant results found in many interesting hypothesised relationships.

The research, however, was inconclusive in determining statistical significance of work-related burnout on the construct of departmental and personal performance. Future research could use more objective measures of success to examine this issue, rather than self-reported measures.



The research also provides management of the sample organisation with insight as to how the centrality of its leadership team can be managed for strategic optimum effect by mitigating against work-related burnout, improving productivity and effecting strategic change.

However, there are many different measures of social network relationships other than Freeman's Centrality. Future research, could examine these different social network measures and their relationships within the broader model of work-related burnout as presented in this research.

The perception of the organisation's dominant culture was impacted by both operational and management centrality. The findings also indicate that social network centrality contributes to work-related burnout but in different ways. Individual managers who lie outside of the central management decision-making network may suffer greater emotional exhaustion due to lack of power issues, thus also indirectly impacting cynicism. But these relationships are complex since withdrawing from the central network may also represent a coping strategy. The research also found workload issues that were derived from operations centrality and the expenditure of resources that comes from differences in leadership styles also impacted emotional exhaustion.

However, the results of the study's path modelling was limited by the 10x rule of PLS-SEM. Given a sample size of thirty-two; this means only three direct relationships to emotional exhaustion could be estimated. With the complexity of the relationships discussed, examining further endogenous variables' impacts on emotional exhaustion would require studies with somewhat larger sample sizes.

Future research with a larger sample and across different industry sectors is needed to further test a broader model of burnout and the possible impact on various measures of both personal and organisational performance. The research findings show that large differences in the leadership behaviour of managers have both a positive and significant impact on emotional exhaustion as well as a coping strategy (under the COR model) of withdrawing from the work-related social network.

Related to this, future research is required in testing these relationships among individual managers in other industries and whether the findings of this study are generalizable or not.

However, despite the limitations outlined above the research findings positively contribute to both the body of scholarly literature regarding work-related burnout and provides a professional template to managers seeking much needed answers regarding the causes of work-related burnout, and the direct and indirect impacts of leadership style differences, social network relationships and perceptions of dominant culture.

## References

- Afsaneh, N. (1993) 'Integrating leadership and strategic management in organisational theory', *Canadian Journal of Administrative Sciences*, 10(4), pp. 297-307.
- Akter, S., D'Ambra, J. and Ray, P. (2011) 'An evaluation of PLS based complex models: the roles of power analysis, predictive relevance and GoF index', *Proceedings of the 17th Americas conference on information systems(AMCIS2011)*, Detroit, Mich.: Association for Information Systems, August 4th-7th 2011, pp. 1-7. Available at: <https://pdfs.semanticscholar.org/890b/7475509493d1038149136a5e3bd6e8486140.pdf> (Accessed: 3 October 2017).
- Alarcon, G. M. (2011) 'A meta-analysis of burnout with job demands, resources and attitudes', *Journal of Vocational Behaviour*, 79(2), pp.549-562.
- Alavifar, A., Karimimalayer, M. and Anuar, M.K. (2012) 'Structural equation modelling vs multiple regression', *Engineering Science and Technology: An International Journal*, 2(2), pp. 326-329.
- Aliyu, A.A., Muhammad, U.B., Rozilah, K. and David, M. (2014) 'Positivist, non-positivist paradigm in social research: conflicting paradigms or perfect partners,' *Journal of Management Sustainability*, 4(3), pp. 79-95.
- Allen-Agostini, L. (2012) 'Independent but are we truly developed?', *Trinidad and Tobago Guardian*, 28 Aug. 2012. Available at: <http://www.guardian.co.tt/columnist/2012-08-28/independent-are-we-truly-developed> (Accessed: 10 September 2016).
- Alvaro, C., Lyons, R.F., Warner, G., Hobfoll, S.E., Martens, P.J., Labonte, R. and Brown, R.E. (2010) 'Conservation of resources theory and research use in health care systems', *Implementation Science*. Available at: <https://doi.org/10.1186/1748-5908-5-79> (Accessed: 10 March 2014).

- Anderson, A., Park, J. and Jack, S. (2007) 'Entrepreneurial social capital: conceptualising social capital in new high-tech firms', *International Small Business Journal: Researching Entrepreneurship*, 25(3), pp.245–272.
- Andrade, A.D. (2009) 'Interpretive research aiming at theory building: adopting and adapting the case study design', *The Qualitative Report*, 14(1), pp.42-60.
- Antiocho, M., Moenaert, R. K. and Lindgreen, A. (2008) 'Reducing ongoing product design decision-making bias', *Journal of Product Innovation Management*, 25(6), pp.528-545.
- Antonakis, J., Avolio, B. J. and Sivasubramaniam, N. (2003) 'Context and leadership: an examination of the nine-factor full-range theory using the multifactor leadership questionnaire', *The Leadership Quarterly*, 14(3), pp.261-295.
- Araim, M., Campbell, M.J., Cooper, C.L. and Lancaster, G.A. (2010) 'What is a pilot or feasibility study? A review of current practice and editorial policy', *BMC Medical Research Methodology*. Available at: <https://doi.org/10.1186/1471-2288-10-67> (Accessed: 16 September 2017).
- Arbuckle, J. L. (2006) *AMOS (Version 7.0)*. [Computer Program]. Chicago: SPSS. Available at: <https://www.ibm.com/us-en/marketplace/structural-equation-modeling-sem> (Downloaded: 3 July 2014).
- Arnold, K. A., Connelly, C. E., Walsh, M. M. and Martin-Ginis, K. A. (2015) 'Leadership styles, emotion regulation, and burnout,' *Journal of Occupational Health Psychology*, 20(4), pp.481-490.
- Baba, V. V., Galperin, B. L. and Lituchy, T. R. (1999) 'Occupational mental health: a study of work-related depression among nurses in the Caribbean', *International Journal of Nursing Studies*, 36(2), pp.163-169.

- Bakker, A. B., Demerouti, E. and Schaufeli, W. B. (2002) 'Validation of the Maslach burnout inventory-general survey: an internet study across occupations,' *Anxiety, Stress, and Coping*, 15(3), pp. 245-260.
- Bakker, A.B. and Heuven, E. (2006) 'Emotional dissonance, burnout, and in-role performance among nurses and police officers', *International Journal of Stress Management*, 13(4), pp.423 – 440.
- Barkhuizen, N., Rothman, S. and van de Vijver F. J. (2014) 'Burnout and work engagement of academics in higher education institutions: effects of dispositional optimism, *Stress and Health*, 30(4), pp.322-332.
- Barnes, L. P. and Kriger, M. P. (1986) 'The hidden side of leadership,' *Sloan Management Review*, 28(1), pp.15-26.
- Bass, B. M. (1985) *Leadership and performance beyond expectations*. New York: Free Press.
- Bass, B. M. and Avolio, B. J. (1995) *Multifactor leadership questionnaire for research*. Redwood City, Calif.: Mind Garden.
- Bass, B. M. and Avolio, B. J. (2000) *Multifactor leadership questionnaire*. Redwood City, Calif.: Mind Garden.
- Bass, B. M. and Bass, R. (2008) *The Bass handbook of leadership: theory, research and managerial applications*. New York: Free Press.
- Berkemeyer, N., Junker, R., Bos, W. and Müthing, K. (2015) 'Organisational cultures in education: theory-based use of an instrument for identifying school culture,' *Journal for Educational Research Online*, 7(3), pp.86-102.
- Bennett, T. M. (2009) 'A study of the management leadership style preferred by subordinates', *Journal of Organisational Culture, Communications and Conflict*, 13(2), pp.1-25.

- Bennis, W. G. and Nanus, B. (1985) *Leaders: the strategies for taking charge*. New York: Harper and Row.
- Bennis, W. G. (1991) 'Managing the dream: leadership in the 21st century', *The Antioch Review*, 49(1), pp. 22-28.
- Blanchet, K. and James, P. (2012) 'How to do or (not to do) a social network analysis in health systems research', *Health Policy and Planning*, 27(5), pp.438-446.
- Bonett, D.G and Wright, T.A. (2014) 'Cronbach's alpha reliability: interval estimation, hypothesis testing and sample size planning', *Journal of Organisational Behaviour*, 36(1), pp.3-15.
- Borgatti, S. P. (2005) 'Centrality and network flow', *Science Direct*, 27(1), pp.55-71.
- Borgatti, S.P. and Cross, R. (2003) 'A relational view of information seeking and learning in social networks', *Management Science*, 49(4), pp. 432-445.
- Borgatti, S. P., Brass, D. J. and Halgin, D. S. (2014) 'Social network research: confusions, criticisms and controversies', *Research in the Sociology of Organisations*, 40, pp.1-29.
- Borgatti, S. P., Everett, M. G. and Freeman, L. C. (2002) *UCINET 6 for Windows (Version 6.5)*. [Computer program]. Harvard, Mass.: Analytic Technologies. Available at: <https://sites.google.com/site/ucinetsoftware/home> (Downloaded: 10 September 2014).
- Borgatti, S. (2009) '2-Mode concepts in social network analysis', in Meyers, R.A. (ed.) *Encyclopaedia of complexity and system science*. Heidelberg: Springer, pp. 8279–8291.
- Borgatti, S. P., Mehra, A. and Brass, L. G. (2009) 'Network analysis in the social sciences', *Science*, 323(5916), pp.892-895.

- Borritz, M., Christensen, K.B., Bültmann, U., Rugulies, R., Lund, T., Andersen, I., Villadsen, E., Diderichsen, F. and Kristensen, T.S. (2010) 'Impact of burnout and psychosocial work characteristics on future long-term sickness absence. Prospective results of the Danish PUMA study among human service workers', *Journal of Occupational and Environmental Medicine*, 52(10), pp. 964-970.
- Brass, D. J. (2012) 'A social network perspective on industrial/organisational psychology', in Kozlowski, S.W.J. (ed.). *The Oxford handbook of industrial and organisational psychology*. New York: Oxford University Press, pp. 667-695.
- Brass, D. J. and Labianca, G. (2012) 'A social network perspective on negotiation', in Shapiro D. and Goldman, B. M. (eds.). *The psychology of negotiations in the 21st century workplace, SIOP organisational frontier series*. New York: Psychology Press/Routledge, pp.245-267.
- Bunmi, O. (2007) 'Effects of leadership style on job related tension and psychological sense of community in work organisations: a case study of four organisations in Lagos State, Nigeria', *Bangladesh Journal of Sociology*, 14(2), pp.45-73.
- Byrne, A., Dionisi, A.M., Barling, J., Akers, A., Robertson, J., Lys, R., Wylie, J. and Dupré, K. (2014) 'The depleted leader: the influence of leaders' diminished psychological resources on leadership behaviours', *The Leadership Quarterly*, 25(2), pp.344-357.
- Cameron, K. S. and Quinn, R. E. (1999) *Diagnosing and changing organisational culture: based on the competing values framework*. Reading, Mass.: Addison-Wesley.
- Cameron, K.S. and Quinn, R.E. (2011) *Diagnosing and changing organisational culture: based on the competing values framework*. 3rd edn. San Francisco, Calif.: John Wiley and Sons.
- Carmeli, A., Schaubroeck, J., and Tishler, A. (2011) 'How CEO empowering leadership shapes top management team processes: implications for firm performance', *The Leadership Quarterly*, 22(2), pp. 399-411.

- Carrascal, L. M., Galvan, I. and Gordo, O. (2009) 'Partial least squares regression as an alternative to current regression models used in ecology', *Oikos*, 118(5), pp. 681-690.
- Cartwright, S. and Holmes, N. (2006) 'The meaning of work: the challenge of regaining employee engagement and reducing cynicism', *Human Resources Management Review*, 16(2), pp.199-208.
- Casson, M. and Della Giusta, M. (2007) 'Entrepreneurship and social capital: analysing the impact of social networks on entrepreneurial activity from a rational action perspective', *International Small Journal: Researching Entrepreneurship*, 25(3), pp.220-244.
- Chen, Y., Wang, Y., Nevo, S., Benitez-Amado, J. and Kou, G. (2015) 'IT capabilities and product innovation performance: the roles of corporate entrepreneurship and competitive intensity', *Information and Management*, 52(6), pp. 643-657.
- Choi, S.Y., Lee, H. and Yoo, Y. (2010) The impact of information technology and transactive memory systems on knowledge sharing, application, and team performance: a field study', *MIS Quarterly*, 34(4), pp. 855-870.
- CIA World Factbook (2016) *The world factbook 2016*. Washington DC: Central Intelligence Agency. Available at: <https://www.cia.gov/library/publications/the-world-factbook> (Accessed: 10 September 2016).
- Cohen, J. (1988) *Statistical power analysis for the behavioural sciences*. 2nd edn. London: Lawrence Erlbaum.
- Cole, M. S. and Bedeian, A. G. (2007) 'Leadership consensus as a cross-level contextual moderator of the emotional exhaustion-work commitment relationship', *The Leadership Quarterly*, 18(5), pp. 447-462.
- Conger, J. and Kanungo, R. N. (1987) 'The empowerment process: integrating theory and practice', *Academy of Management*, 13(3), pp.471-488.



- Cooke, P., Oleaga, M. and Clifton, N. (2005) 'Social capital, firm embeddedness and regional development', *Regional Studies*, 39(8), pp.1065-1077.
- Cooke, L. and Hall, H. (2013) 'Facets of dream: A social network analysis exploring network development in the UK LIS research community', *Journal of Documentation*, 69(6), pp.786-806.
- Crawford, E. R., LePine, J. A. and Rich, B. L. (2010) 'Linking job demands and resources to employee engagement and burnout: a theoretical extension and meta-analytic test', *Journal of Applied Psychology*, 95(5), pp.834-848.
- Creswell, J. W. (2012) *Qualitative inquiry and research design: choosing among five approaches*. 2nd edn. Thousand Oaks, Calif.: Sage.
- Creswell, J. W., Plano Clark, V. L., Gutmann, M. L. and Hanson, W. E. (2003) 'Advanced mixed methods research designs', in Tashakkori, A. and Teddlie, C. (eds), *Handbook of mixed methods in social and behavioural research*. Thousand Oaks, Calif.: Sage, pp.209-240.
- Creswell, J.W. (2009) *Research design: qualitative, quantitative and mixed method approaches*. 3rd edn. London: Sage.
- Creswell, J. W. and Plano Clark, V. L. (2007) *Designing and conducting mixed methods research*. Thousand Oaks, Calif.: Sage.
- Cross, R., Borgatti, S. P. and Parker, A. (2002) 'Making invisible work visible: using social network analysis to support strategic collaboration', *California Management Review*, 44(2), pp. 25-46.
- Demerouti, E., Bakker, A. B., Vardakou, I. and Kantas, A. (2003) 'The convergent validity of two burnout instruments: a multi-trait-multi-method analysis', *European Journal of Psychological Assessment*, 19(1), pp.12-23.

- Demerouti, E. and Bakker, A.B. (2007) 'Measurement of burnout and engagement. The Oldenburg burnout inventory: a good alternative to measure burnout and engagement', in Halbesleben, J.R.B.(ed.). *Handbook of stress and burnout in health care*. Hauppauge, NY: Nova Science.
- Demerouti, E., Mostert, K. and Bakker, A. B. (2010) 'Burnout and work engagement: a thorough investigation of the independency of both constructs', *Journal of Occupational Health Psychology*, 15(3), pp.209-222.
- Denison, D.R. and Mishra, A.K. (1995) 'Toward a theory of organisational culture and effectiveness', *Organisation Science*, 6(2), pp.204-223.
- Deshpande, R. Farley, J.V. and Webster, F.E. jnr. (1993) 'Corporate culture, customer orientation innovativeness in Japanese firms: a quadred analysis', *Journal of Marketing*, 57(1), pp.23-27.
- Dharmayanti, G., Coffey, V. and Trigunarsyah, B. (2011) 'The importance of organisational culture to improve a project selection process: case of public infrastructure project in Indonesia', in Taplin, J. (ed.). *Toward liveable cities and better communities*. Perth, Aus.: Smart Vision International, pp. 1-11.
- Diamantopoulos, A., Sarstedt, M., Fuchs, C., Wilczynski, P. and Kaiser, S. (2012) 'Guidelines for choosing between multi-item and single-item scales for construct measurement: a predictive validity perspective', *Journal of Academic Marketing*, 40, pp.434-449.
- Dimitrios, B. and Konstantinos, V. (2014) 'Organisational culture and job burnout- a review', *International Journal of Business Management*, 2(1), pp.43-62.
- Dudovskiy, J. (2016) *Positivism Research Philosophy*. Research methodology. Available at: <https://research-methodology.net/research-philosophy/positivism/> (Accessed: 8 August 2017).

- Dunn, M. W., Dastoor, B., and Sims, R. L. (2012) 'Transformational leadership and organisational commitment: a cross-cultural perspective', *Journal of Multi-Disciplinary Research*, 4(1), pp.45-49.
- Esnard, T. and Mohammed, L. (2014) 'Socio-demographic background, social support and depression levels among undergraduate prospective teachers in Trinidad and Tobago', *Caribbean Journal of Psychology*, 6(1), pp.21-42.
- Fan, Y., Chen, J., Shirkey, G., John, R., Wu, S., Park, H. and Shao, C. (2016) 'Applications of structural equation modelling (SEM) in ecological studies: an updated review', *Ecological Processes*. Available at: <https://doi.org/10.1186/s13717-016-0063-3> (Accessed 16 September 2017).
- Fowler, J. H. and Christakis, N. A. (2008) 'Dynamic spread of happiness in a large social network: longitudinal analysis over 20 years in the Fraingham heart study', *BMJ*, 337, a2338. Available at: <https://doi.org/10.1136/bmj.a2338> (Accessed 12 March 2014).
- Fralinger, B. and Olson, V. (2007) 'Organisational culture at the university level: a study using the OCAI instrument', *Journal of College Teaching and Learning*, 4(11), pp.85-98.
- Freeman, L. (1978) 'Centrality in social networks conceptual clarification', *Social Networks*, 1(3), pp. 215-239.
- French, A., Macedo, M., Poulsen, J., Waterson, T. and Yu, A. (2008) *Multi-variate analysis of variance (MANOVA)*. San Francisco, Calif.: San Francisco State University. Available at: <http://online.sfsu.edu/efc/classes/biol710/manova/MANOVAnewest.pdf> (Accessed: 16 September 2017).
- Freudenberger, H. J. (1975) 'The staff burn-out syndrome in alternative institutions', *Psychotherapy: Theory, Research and Practice*, 12(1), pp.72-83.
- Frone, M.R. and Russell, M.R. (1997a) 'Job stressors, job involvement and employee health: a test of identity theory', *Journal of Occupational and Organisational Psychology*, 68(1), pp.1-11.

- Frost, P. J. (2004) 'Handling toxic emotions: new challenges for leaders and their organisation', *Organisational Dynamics*, 33(2), pp. 111-127.
- Galbraith, C. S. and Merrill, G. B. (2012) 'Academic and work-related burnout: a longitudinal study of working undergraduate university business students', *Journal of College Student Development*, 53(3), pp.453-463.
- Gefen, D., Straub, W. and Boudreau, M.C. (2000) 'Structural equation modelling and regression: guidelines for research practice', *Communications of the Association for Information Systems*, 4(1), pp.1-78.
- Ghisletta, P. and McArdle, J. J. (2012) 'Latent curve models change score models estimated in R', *Structural Equation Modelling: A Multi-Disciplinary Journal*, 19(4), pp.651-682.
- Giannakis, M. (2012) 'The intellectual structure of the supply chain management discipline: a citation and social network analysis', *Journal of Enterprise Information Management*, 25(2), pp.136 –169.
- Gill, A. S., Flaschner, A. B. and Shachar, M. (2006) 'Mitigating stress and burnout by implementing transformational leadership', *International Journal of Contemporary Hospitality Management*, 18(6), pp.469-481.
- Goodhue, O.L., Lewis, W. and Thompson, R. (2012) 'Comparing PLS to regression and LISREL: a response to Marcoulides, Chin and Saunders', *MIS Quarterly*, 36(3), pp.703-716.
- Gómez, D., Figueira, J. R. and Eusébio, A. (2013) 'Modelling centrality measures in social network analysis using bi-criteria network flow optimisation problems', *European Journal of Operational Research*, 226(2), pp.354-365.
- Gorgievski, M.J. and Hobfoll, S.E. (2008) 'Work can burn us out or fire us up: conservation of resources in burnout and engagement', in Halbesleben, J.R.B. (ed.). *Handbook of stress and burnout in health care*. Hauppauge, NY: Nova Science, pp.7-22.

- Goodman, L. A. (2011) 'Comment: on respondent-driven sampling and snowball sampling in hard to reach populations and snowball sampling in not hard to reach populations. Sociological methodology,' *American Sociological Association*, 41(1), pp.347-353.
- Glisson, C. and James, L. R. (2002) 'The cross-level effects of culture and climate in human service teams', *Journal of Organisational Behaviour*, 23(6), pp.767-794.
- Grant, A. M. and Sonnentag, S. (2010) 'Doing good buffers against feeling bad: prosocial impact compensates for negative task and self-evaluations', *Organisational Behaviour and Human Decision Processes*, 111(1), pp.13-22.
- Gray, D. E. (2013) *Doing research in the real world*. 2nd edn. London: Sage.
- Gray, H. (2012) 'Leadership-an elusive concept', *International Journal of Leadership in Public Services*, 8(2), pp.99-106.
- Griggs, T. L., Casper, W. J. and Eby, L. T. (2013) 'Work, family and community support as predictors of work-family conflict: a study of low-income workers', *Journal of Vocational Behaviour*, 82(1), pp.59-68.
- Hakanen, J. J. and Schaufeli, W. B. (2012) 'Do burnout and work engagement predict depressive symptoms and life satisfaction? A three-wave seven-year prospective study', *Journal of Affective Disorders*, 141(2), pp.415-424.
- Hair, J. F., Sarstedt, M., Pieper, T., and Ringle, C. M. (2012) 'The use of partial least squares structural equation modelling in strategic management research: a review of past practices and recommendations for future applications', *Long Range Planning*, 45 (5/6), pp.320-340.
- Hair, F. Jnr. J., Sarstedt, M., Hopkins, L. and Kuppelwieser, V. (2014) 'Partial least squares structural equation modelling (PLS-SEM): an emerging tool in business research', *European Business Review*, 26(2), pp.102-121.

- Halbesleben, J. R. B. (2006) 'Sources of social support and burnout: a meta-analytic test of the conservation of resources model', *Journal of Applied Psychology*, 91(5), pp.1134-1145.
- Halbesleben, J. R., Neveu, J. P. and Paustian-Underdahl, S. C. (2014) 'Getting to the "COR": understanding the role of resources in conservation of resources theory', *Journal of Management*, 40(5), pp.1334-1364.
- Han, H. (2012) 'The relationship among corporate culture, strategic orientation and financial performance', *Cornell Hospitality Quarterly*, 53(3), pp.207-219.
- Handcock, M. S. and Gile, K. J. (2010) 'Modelling social networks from sampled data', *The Annals of Applied Statistics*, 4(1), pp.5-25.
- Hanneke, S., Fu, W. and Xing, E. P. (2010) 'Discrete temporal models of social networks', *Electronic Journal of Statistics*, 4, pp.585-605.
- Hanneman, R. A. and Riddle, R. (2005) *Introduction to social network methods*. Riverside, Calif.: University of Riverside California. Available at: <http://faculty.ucr.edu/~hanneman/> (Accessed: 4 March 2016).
- Heckathorn, D. D. (2011) 'Comment: snowball versus respondent-driven sampling', *Sociological Methodology* 41(1), pp. 355-366.
- Heinitz, K., Liepmann, D., and Felfe, J. (2005) 'Examining the factor structure of the MLQ: recommendation for a reduced set of factors', *European Journal of Psychological Assessment*, 21(3), pp.182-190.
- Henseler, J., Hubona, G. and Ray, P.A. (2016) 'Using PLS path modelling in new technology research: updated guidelines', *Industrial Management and Data Systems*, 116(1), pp.2-20.
- Heo, M., Kim, N. and Faith, M.S. (2015) 'Statistical power as a function of Cronbach alpha of instrument questionnaire items', *BMC Medical Research Methodology*, 15(1), pp.1-9.

- Hetland, H., Saandal, G. M. and Johnsen, T. B. (2007) 'Burnout in the information technology sector: does leadership matter?', *European Journal of Work and Organisational Psychology*, 16(10), pp.58-75.
- Heritage, B., Pollock, C. and Roberts, L. (2014) 'Validation of organisational culture assessment instrument', *PLOS one*, (3) e928799. Available at: <https://doi.org/10.1371/> (Accessed: 16 September 2015).
- Hinkin, T. R. and Schriesheim, C. (2008) 'An examination of "non-leadership": from laissez-faire leadership to leader reward omission and punishment omission', *Journal of Applied Psychology*, 93(6), pp.1234-1248.
- Hobfoll, S.E. (1989) 'Conservation of resources: a new attempt at conceptualising stress', *American Psychologist*, 44(3), pp.513-524.
- Hobfoll, S.E. (2002) 'Social and psychological resources and adaptation', *Review of General Psychology*, 6(4), pp.307-324.
- Hobfoll, S.E. (2001) 'The influence of culture, community, and the nested-self process: advancing conservation of resources theory', *Applied Psychology: An International Review*, 50(3), pp.337-421.
- Hobfoll, S. and Shirom, A. (1993) 'Stress and burnout in the workplace: conservation of resources', in Golembrewski, R.T. (ed.). *Handbook of organisation behaviour*. New York: Dekker, pp. 263-298.
- Hoppe, B. and Reinelt, C. (2010) 'Social network analysis and the evaluation of leadership networks', *The Leadership Quarterly*, 21(4), pp. 600-619.
- Hunsaker, S., Chen, H.C., Maughan, D. and Heaston, S. (2015) 'Factors that influence the development of compassion fatigue, burnout, and compassion satisfaction in emergency department nurses', *Journal of Nursing Scholarship*, 47(2), pp.186-194.
- Hughes, R., Ginnet, R. and Curphy, G. (2002) *Leadership: enhancing the lesson of experience*. 4th edn. Boston: McGraw.

- Ito, J. K and Brotheridge, C. M. (2003) 'Resources, coping strategies and emotional exhaustion: a conservation of resources perspective', *Journal of Vocational Behaviour*, 63(3), pp.490-509.
- Jawahar, I. M., Kisamore, J. L., Stone, T. H. and Rahn, D. L. (2012) 'Differential effect of inter-role conflict on proactive individual's experience of burnout', *Journal of Business and Psychology*, 27(2), pp.243-254.
- Jedd, T. and Bixler, R. P. (2015) 'Accountability in networked governance: learning from a case of landscape-scale forest conservation', *Environmental Policy and Governance*, 25(3), pp.172-187.
- Jogulu, U. P. (2010) 'Culturally-linked leadership styles', *Leadership and Organisation Development Journal*, 31(8), pp.705-719.
- Jostad, J., Sibthorp, J. and Paisley, K. (2013) 'Understanding groups in outdoor adventure education through social network analysis', *Australian Journal of Outdoor Education*, 17(1), pp.17-31.
- Judge, T.A. and Bono, J.E. (2000) 'Five-factor model of personality and transformation leadership', *Journal of Applied Psychology*, 85(5), pp.751-765.
- Karatepe, O. M. (2010) 'The effect of positive and negative work-family interaction on exhaustion: does work social support make a difference?', *International Journal of Contemporary Hospitality Management*, 22(6), pp.836-856.
- Kennedy, V. (2010) 'Social network analysis and research with Māori collectives', *Mai Review*, (3), pp.1-21.
- Kristensen, T. S., Borritz, M., Villadsen, E. and Christensen, K. B. (2005) 'The Copenhagen burnout inventory: a new tool for the assessment of burnout', *Work and Stress*, 19(3), pp.192-207.
- Kotter, J.P. and Heskett, J.L. (1992) *Corporate culture and performance*. New York: Free Press.



- Kwag, S.H. and Kim, M.H. (2009) 'The effects of organisational members' job burnout', *Journal of Business and Economics Research*, 7(7), pp.63-78.
- La Guerre, J. G. and Bissessar, A. (2009) 'The role of leadership in public management: the case of Trinidad and Tobago and Guyana', *Social and Economic Studies*, 58(1), pp.125-139.
- Lancaster, G.A. (2015) 'Pilot and feasibility studies come of age!', *BioMed Central*. Available at: <https://doi.org/10.1186/2055-5784-1-1> (Accessed: 10 September 2017).
- Langelaan, S., Bakker, A.B., Van Doornen, L. J. and Schaufeli, W. B. (2006) 'Burnout and work engagement: do individual differences make a difference?', *Personality and Individual Differences*, 40(3), pp.521-532.
- Laschinger, H.K.S. and Fida, R. (2014) 'A time-lagged analysis of the effect of authentic leadership on workplace bullying, burnout, and occupational turnover intentions', *European Journal of Work and Organisational Psychology*, 23(5), pp. 739-753.
- Laschinger, H. K. S., Wong, C.A. and Grau, A. L. (2012) 'The influence of authentic leadership on newly graduated nurses' experiences of workplace bullying, burnout and retention outcomes: a cross-sectional study', *International Journal of Nursing Studies*, 49(10), pp.1266-1276.
- Latack, J. C. and Havlovic, S. J. (1992) 'Coping with job stress: a conceptual evaluation framework for coping measures', *Journal of Organisational Behaviour*, 13(5), pp.479-508.
- Lee, R. and Jones, O. (2008) 'Networks, communication and learning during business start-up: the creation of cognitive social capital', *International Small Business Journal: Researching Entrepreneurship*, 26(5), pp.559-594.
- Lopaciuk- Gonczaryk, B. (2011) 'Corporate social capital: results of empirical research in a financial institution', *Procedia and Behavioural Sciences*, 10, pp.62-67.

- Lowry, P.B. and Gaskin, J. (2014) 'Partial least squares (PLS) structural equation modelling for building and testing behavioural causal theory: when to choose it and how to use it', *IEEE Transactions on Professional Communication*, 57(2), pp.123-146.
- Lucie-Smith, P. (2012) 'The right to read', *Caribbean Beat online magazine*, issue 117, (September/October 2012). Available at: <http://www.caribbean-beat.com/issue-117/right-read#axzz57VezceWS> (Accessed: 16 September 2017).
- Llorens, S., Bakker, A. B., Schaufeli, W. and Salanova, M. (2006) 'Testing the robustness of the job demands-resources model', *International Journal of Stress Management*, 13(3), pp.378-391.
- Makri, M. and Scandura, T. A. (2010) 'Exploring the effects of creative CEO leadership on innovation in high technology firms', *The Leadership Quarterly*, 21(1), pp.75-88.
- Malik, S. H., Aziz, S. and Hassan, H. (2014) 'Leadership behaviour and acceptance of leaders by subordinates: application of path goal theory in telecom sector', *International Journal of Trade, Economics and Finance*, 5(2), pp.170-175.
- Mangan, J., Lalwani, C. and Gardner, B. (2004) 'Combining quantitative and qualitative methodologies in logistics research', *International Journal of Physical Distribution and Logistics Management*, 34(7), pp.565-578.
- Marchand, A., Haines, V. Y. and Dextras-Gauthier, J. (2013) 'Quantitative analysis of organisational culture in occupational health research: a theory-based validation in 30 workplaces of the organisational culture profile instrument', *BMC Public Health*, 13(1), pp.1-11.
- Marin, A. and Wellman, B. (2014) 'Social network analysis: an introduction', in the *Sage handbook of social network analysis*, Scott, J. and Carrington, P. (eds.). London: Sage, pp. 11-25. Available at: <http://10.4135/9781446294413.n2> (Accessed: 10 March 2015).

- Martin, T., Zhang, X. and Newman, M. E. J. (2014) 'Localisation and centrality in networks', *Physical Review*, E90, 052808. Available at: <https://doi.org/10.1103/PhysRevE.90.052808> (Accessed: 10 November 2014).
- Martins, E. and Martins, N. (2002) 'An organisational culture model to promote creativity and innovation', *SA Journal of Industrial Psychology*, 28(4), pp.58-65.
- Maslach, C. (1976) 'Burned out', *Human Behaviour*, 5(9), pp.16-22.
- Maslach, C. and Jackson, S. E. (1981) 'The measurement of experienced burnout', *Journal of Occupational Behaviour*, 2(2), pp.99-113.
- Maslach, C. and Jackson, S. E. (1986) *Maslach burnout inventory*. 2nd edn. Palo Alto, Calif.: Consulting Psychologists Press.
- Maslach, C. (1988) 'A multi-dimensional theory of burnout', in Cooper, C.L. (ed.). *Theories of organisational stress*. Oxford: Oxford University Press, pp. 68-85.
- Maslach, C. and Leiter, M. P. (1997) *The truth about burnout: how organisations cause personal stress and what to do about it*. San Francisco, Calif.: Josey Bass.
- Maslach, C., Schaufeli, W. B. and Leiter, M. P. (2001) 'Job burnout', *Annual Review of Psychology*, 52(1), pp.397-422.
- Maslach, C. and Leiter, M. P. (2008) 'Early predictions of job burnout and engagement', *Journal of Applied Psychology*, 93(3), pp.498-512.
- Maslach, C. (2011) 'Burnout and engagement in the workplace: new perspectives', *The European Health Psychologist*, 13(3), pp.44-47.
- Mawritz, M. B., Dust, S. B. and Resick, C. J. (2014) 'Hostile climate, abusive supervision, and employee coping: does conscientiousness matter?', *Journal of Applied Psychology*, 99(4), pp.737-747.
- Melamed, S., Kushnir, T. and Shirom, A. (1992) 'Burnout and risk factors for cardiovascular diseases', *Behavioural Medicine*, 18(2), pp.53-60.

- McVicar, A. (2003) 'Workplace stress in nursing: a literature review', *Journal of Advanced Nursing*, 44(60), pp.633-642.
- Michel, J. W., Lyons, B. D. and Cho. J. (2010) 'Is the full-range model of leadership really a full range model of effective leader behaviour?', *Journal of Leadership and Organisational Studies*, 18 (4), pp.493-507.
- Michinov, N. (2005) 'Social comparison, perceived control, and occupational burnout', *Applied Psychology: An International Review*, 54(1), pp.99-118.
- Moynihan, D. P. and Pandey, S. K. (2007) 'The role of organisations in fostering public service motivation', *Public Administration Review*, 67(1), pp.40-53.
- Muenjohn, N. and Armstrong, A. (2008) 'Evaluating the structural validity of the multi-factor leadership questionnaire (MLQ): capturing the leadership factors of transformational, transactional leadership', *Contemporary Management Research*, 4(1), pp.3-14.
- Muhammad, A. (2009) *Transforming school culture: How to overcome staff division*. 2nd edn. Bloomington, Ind.: Solution Tree Press.
- Nachtigall, C., Kroehne, U., Funke, F. and Steyer, R. (2003) 'Why should we use SEM? Pros and cons of structural equation modelling', *Methods of Psychological Research Online.*, 8(2), pp.1-22. Available at: [https://www.researchgate.net/.../240622131\\_](https://www.researchgate.net/.../240622131_) (Accessed: 12 March 2014).
- Nyberg, A., Bernin, P. and Theorell, T. (2005) *The impact of leadership on the health of subordinates, SALSTA Report 1*. Stockholm: National Institute for Working Life.
- Oshagbemi, T. and Gill, R. (2003) 'Gender differences and similarities in the leadership styles and behaviour of UK Managers', *Women in Management Review*, 18(6), pp.288-298.
- Otte, E. and Rousseau, R. (2002) 'Social network analysis: a powerful strategy, also for the information sciences', *Journal of Information Science*, 28(6), pp.441-453.

- Pearce, J. A. and Doh, J. P. (2012) 'The high impact of collaborative social initiatives', *Sloan Management Review*, 46(2), pp.30-39.
- Peterson, R.A. and Kim, Y. (2013) 'On the relationship between coefficient alpha and composite reliability', *Journal of Applied Psychology*, 98(1), pp.194-198.
- Petitta, L. and Vechionne, M. (2011) 'Job burnout, absenteeism and extra role behaviours', *Journal of Workplace Behavioural Health*, 26 (2), pp.97-121.
- Provan, K.G., Harvey, J. and de Zapien, J.G. (2005) 'Network structure and attitudes toward collaboration in a community partnership for diabetes control on the US-Mexican border', *Journal of Health Organisation and Management*, 19(6), pp.504-518.
- Provan, K.G., Milward, H. and Isett, K. (2002) 'Collaboration and integration of community-based health and human services in a non-profit managed care system', *Health Care Management Review*, 27(1), pp.21-32.
- Pryke, S. (2012) *Social network analysis in construction*. London: John Wiley and Sons.  
Available at: <http://onlinelibrary.wiley.com/book/10.1002/9781118443132>  
(Accessed: 10 September 2015).
- Racher, F.E. and Robinson, S. (2003) 'Are phenomenology and post-positivism strange bedfellows?', *Western Journal of Nursing*, 25(5), pp.464-481.
- Rafiq-Awan, M. and Mahmood, K. (2010) 'Relationship among leadership style, organisational culture and employee commitment in university libraries', *Library Management*, 31 (4/5), pp.253-266.
- Reed, M. S., Graves, A., Dandy, N., Posthumus, H., Hubacek, K., Morris, J., Prell, C., Quinn, C.H. and Stringer, L. C. (2009) 'Who's in and why? A typology of stakeholder analysis methods for natural resource management', *Journal of Environmental Management*, 90(5), pp.1933-1949.

- Restubog, S. L. D., Scott, K. L. and Zagenczyk, T. J. (2011) 'When distress hits home: the role of contextual factors and psychological distress in predicting employees' responses to abusive supervision', *Journal of Applied Psychology*, 96(4), pp.713–729.
- Richardsen, A. M. and Martinussen, M. (2005) 'Factorial validity and consistency of the MBI-GS across occupational groups in Norway', *International Journal of Stress Management*, 12(3), pp.289-297.
- Richter, N. F., Sinkovic, R. R., Ringle, C. M., and Schlägel, C. (2016) 'A critical look at the use of SEM in international business research', *International Marketing Review*, 33(3), pp.376-404.
- Rod, M. and Ashill, N.J. (2009) 'Symptoms of burnout and service recovery performance. The influence of job resourcefulness', *Managing Service Quality: An International Journal*, 19(1), pp.60-84.
- Salanova, M., Schaufeli, W. B., Xanthopoulou, D. and Bakker, A. (2010) 'The gain spiral of resources and work engagement: sustaining a positive work life', in Bakker, A.B. (ed.) and Leiter, M.P. *Work engagement: a handbook of essential theory and research*. New York: Psychology Press, pp. 118-131.
- Samini, S.A. (2016) 'Steps in research process (partial least square of structural equation modelling (PLS-SEM))', *International Journal of Social Science and Business*, 1(2), pp.55-66.
- Sarros, J. C., Cooper, B. K. and Santora, J. C. (2008) 'Building a climate for innovation through transformational leadership and organisational culture', *Journal of Leadership and Organisational Studies*, 15(2), pp.145-158.
- Schaufeli, W.B. and Bakker, A.B. (2004) 'Job demands, job resources, and their relationship with burnout and engagement: a multi-sample study', *Journal of Organisational Behaviour*, 25(3), pp.293-315.

- Schaufeli, W. B., Bakker, A. B. and Salanova, M. (2006) 'The measurement of work engagement with a short questionnaire a cross-national study', *Educational and Psychological Measurement*, 66(4), pp.701-716.
- Schaufeli, W. B., Bakker, A. B. and Van Rhenen, W. (2009) 'How changes in job demands and resources predict burnout, work engagement and sickness absenteeism', *Journal of Organisation Behaviour*, 30(7), pp.893-917.
- Schaufeli, W. B., Leiter, M. P., Maslach, C. and Jackson, S. E. (1996) 'MBI-General Survey', in Maslach, C., Jackson, S.E. and Leiter, M.P. (eds.). *The Maslach burnout inventor test manual*. 3rd edn. Palo Alto, Calif.: Consulting Psychologist Press.
- Schaufeli, W. B and Salanova, M. (2007) 'Work engagement – An emerging psychological concept and its implications for organisation. Managing social and ethical issues in organisations', in Gilliland, S.W., Steiner, D.D. and Skarlicki, D.P. (eds.). *Research in social issues of management*. Greenwich: Information Age Publishers, (5), pp.135-177.
- Schaufeli, W. B., Salanova, M., Roma-Gonzalez and Bakker, A. B. (2002) 'The measurement of engagement and burnout: a two-sample confirmatory factor analytic approach', *Journal of Happiness Studies*, (3), pp.71-92.
- Schaufeli, W. B. and Taris, T. W. (2005) 'The conceptualisation and measurement of burnout: common ground and worlds apart', *Work and Stress*, 19(3), pp.256-262.
- Schein, E.H. (2004) *Organisational culture and leadership*. 3rd edn. San Francisco, Calif.: Jossey-Bass.
- Schein, E. H. (2009) *The corporate culture survival guide*. New and rev. edn. San-Francisco, Calif.: Jossey-Bass.
- Schepers, J., Wetzels, M., de Ruyter, K. (2005) 'Leadership styles in technology acceptance: do followers practice what leaders preach?', *Managing Service Quality: An International Journal*, 15(6), pp.496-508.

- Schutte, N. Toppinnen, S., Kalimo, R. and Schaufeli, W. B. (2000) 'The factorial validity of the Maslach burnout inventory- general survey (MBI-GS) across occupational groups and nations', *Journal of Occupational and Organisational Psychology*, 73(1), pp.52-66.
- Sedwick, P. (2012) 'Pearson's correlation coefficient', *BMJ*, 345, e4483. Available at: <https://doi.org/10.1136/bmj.e4483> (Accessed 10 September 2015).
- Shamir, B., House, R. and Arthur, M. (1993) 'The motivational effects of charismatic leadership: a self-concept theory', *Journal of Leadership and Organisational Studies*, 10(4), pp.103-111.
- Shirom, A. (1989) 'Burnout in work organisations', in Cooper, C.L. and Robertson T. (eds.). *International review of industrial and organisational psychology*, New York: John Wiley and Sons, pp. 25-48.
- Simon, M. R. and Preziosi, R. C. (2009) 'The impact of transformational leadership on small and medium enterprises in Trinidad. Essay from the field', *International Leadership Journal*, 1 (3/4), pp.35-53.
- Singh, P., Nadim, A. and Ezzedeen, S. R. (2012) 'Leadership styles and gender: an extension', *Journal of Leadership Studies*, 5(4), pp.6-19.
- Small, M. L. (2011) 'How to conduct a mixed methods study: recent trends in a rapidly growing literature', *Annual Review of Sociology*, 37, pp.57-86.
- Sookoo, N. (2014). 'Perceptions of injustice and alienation dynamics within the workplace', *Journal of the Department of Behavioural Sciences*, 3(1), pp.81-99.
- Spence, L. J., Schmidpeter, R. and Habisch, A. (2003) 'Assessing social capital: small and medium sized enterprises in Germany and the U.K.', *Journal of Business Ethics*, 47(1), pp.17-29.



- Stordeur, S., D'hoore, W. and Vandenberghe, C. (2001) 'Leadership, organisational stress, and emotional exhaustion among hospital nursing staff', *Journal of Advanced Nursing*, 35(4), pp.533-542.
- Straub, D., Loch, K., Evaristo, R., Karahanna, E. and Srite, M. (2002) 'Toward a theory-based measurement of culture', *Journal of Global Information Management*, 10(1), pp.13-23.
- Stumpf, M. P. H., Wiuf, C. and May, R. M. (2005) 'Subnets of scale-free are not scale-free: sampling properties of networks', *National Academy of Sciences the United States of America*, 102(12), pp.4221-4224.
- Suderman, J. (2012) 'Using the organisational culture assessment (OCAI) as a tool for new team development', *Journal of Practical Consulting*, 4(1), pp.52-58.
- Taris, T. W., Le Blanc, P. M., Schaufeli, W. B. and Schreurs, P. J. G. (2005) 'Are there causal relationships between the dimensions of the Maslach Burnout Inventory? A review and two longitudinal tests', *Journal of Work and Stress*, 19(3), pp.238-255.
- Tavakol, M. and Dennick, R. (2011) 'Making sense of Cronbach's alpha', *Journal of Medical Education*, 2, pp.53-55.
- Tepper, B.J., Duffy, M. K., Henle, C. A. and Lambert, L. (2006) 'Procedural injustice, victim precipitation, and abusive supervision', *Personnel Psychology*, 59(1), pp.101-123.
- Thornton, P. H., Ribeiro-Soriano, D., and Urbano, D. (2011) 'Socio-cultural factors and entrepreneurial activity an overview. *International Small Business Journal: Researching Entrepreneurship*, 29(2), pp.105-118.
- Trompenaars, F. and Hampden-Turner, C. (1998) *Riding the waves of culture: understanding diversity in global business*. New York: Mc Graw Hill.
- van Teijlingen, E.R. and Hundley, V. (2001) 'The importance of pilot studies', *Social Research Update*, 35. Available at: <http://sru.soc.surrey.ac.uk/SRU35.html> (Accessed: 3 October 2017).

- Vigoda-Gadot, E. (2006) 'Leadership style, organisational politics and employees' performance: an empirical examination of two competing models', *Personnel Review*, 36(5), pp.661-683.
- Waldman, D.A., Ramirez, G., House, R. and Purano, J. (2001) 'Does leadership matter? CEO leadership attributes and profitability under conditions of perceived environmental uncertainty', *Academy of Management Executive*, 44(1), pp.134-143.
- Wallach, E. J. (1983) 'Individuals and organisations: the cultural match', *Training and Development Journal*, 37(2), pp.28-36.
- Wassell, A., Ceruti, M., Haas, N., Adams, K., Lehan, S. and Yang, D. S. (2011) 'Towards a C2 poly visualization tool: leveraging the power of social network analysis and GIS', *Collective C2 in multi-national civil military operations: the 16th research and technology symposium*. Quebec City, Canada, 21-23 June 2011. Available at: <http://www.dtic.mil/dtic/tr/fulltext/u2/a547159.pdf> (Accessed: 15 March 2017).
- Westerlund, H., Ferrie, J., Hagberg, J., Jeding, K., Oxenstierna, G. and Theorell, T. (2004) 'Workplace expansion, long-term sickness absence, and hospital admission', *The Lancet*, 363(9416), pp.1193-1197.
- Whetsell, T.A. and Shields, P.M. (2013) 'The dynamics of positivism in the study of public administration. A brief intellectual history and reappraisal', *Administration and Society*, 47(4), pp.416-446.
- Whitman, M.V., Halbesleben, J.R.B. and Holmes, O. (2014) 'Abusive supervision and feedback avoidance: the mediating role of emotional exhaustion', *Journal of Organisation Behaviour*, 35(1), pp.38-53.

- Willaby, H., Costa, D., Burns, B., MacCann, C. and Roberts, R. (2015) 'Testing complex models with small sample sizes: a historical overview and empirical demonstration of what partial least squares (PLS) can offer differential psychology' *Personality and Individual Differences*, 84, pp.73-78.
- Wolf, E.J., Harrington, K.M, Clark, S.L. and Miller, M.W. (2013) 'Structural size requirements for structural models: an evaluation of power, bias and solution propriety', *Educational and Psychological Measurement*, 73(6), pp.913-934.
- Wong, C. A. and Laschinger Spence, H. K. (2015) 'The influence of frontline manager job strain on burnout, commitment and turnover intention: a cross-sectional study', *International Journal of Nursing Studies*, 52(12), pp.1824-1833.
- Wong, K.K.K. (2013) 'Partial least squares, structural equation modelling, (PLS-SEM) techniques, using SmartPLS', *Marketing Bulletin*, 24, pp.1-32.
- Wu, S., Hofman, J. M., Mason, W. A. and Watts, D. J. (2011) 'Who says what to whom on twitter', *Proceedings of the 20th international conference on world wide web*, Hyderabad, India, 28 March - 1 April 2011. New York: ACM Digital Library, pp. 705-714. Available at:  
<http://www.wwwconference.org/proceedings/www2011/proceedings/p705.pdf>  
 (Accessed: 10 March 2017).
- Wu, S., Zhu, W., Wang, Z., Wang, M. and Lan, Y. (2007) 'Relationship between burnout and occupational stress among nurses in China', *Journal of Advanced Nursing*, 59(3), pp.233-239.
- Youseff, F. F. (2016) 'Medical student stress, burnout and depression in Trinidad and Tobago', *Academic Psychiatry*, 40(10), pp.69-75.
- Yin, R.K. (1994) *Case study research design and methods*. 2nd edn. London: Sage.
- Yin, R. K. (2009) *Case study research design and methods*. 4th edn. Thousand Oaks, Calif.: Sage.

- Zainal, Z. (2007) 'Case study as a research methodology', *Journal Kemanusiaan*, pp.1-6.
- Zamini, S., Zamini, S. and Barzegary, L. (2011) 'The relationship between organisational culture and job burnout among the professors and employees in the University of Tabriz', *Procedia Social and Behavioural Sciences*, 30, pp.1964-1968.
- Zopiatis, A. and Constanti, P. (2010) 'Leadership styles and burnout is there an association?', *International Journal of Contemporary Hospitality Management*, 22(3), pp.300-320.
- Zwingmann, I., Wegge, J., Wolf, S., Rudolf, M., Schmidt, M. and Richter, P. (2014) 'Is transformational leadership healthy for employees? A multilevel analysis in 16 nations', *German Journal of Research in Human Resource Management*, 28 (1/2), pp.24-51.

## Appendix A: SBCS Letter

### School of Business & Computer Science Ltd.



January 12<sup>th</sup> 2011

Neal and Massy  
ITC Group  
115 Tragarete Road  
Port of Spain

Dear Sir/Madam,

**Re: Ms. Cheryl Ann Phillips**

This is to confirm that Ms. Cheryl Ann Phillips is registered and currently pursuing the **Heriot Watt University Doctorate in Business Administration Degree** programme at SBCS.

The course comprises of **eleven** modules, one Research Proposal and a Thesis.

Ms. Phillips wishes to request authorization from your organization to conduct a research, titled: **"Leadership: The appropriateness of leadership skills in the NM ITC Group in Trinidad & Tobago and its impact on company success."** She has indicated access to the following would be required:

- Access to key company Executives in the Company (CEOs, CFO, Group Chairman)
- Access to financial information (Annual Financial Reports, EPS etc)
- HR initiatives for CEO's and or any Group strategic objectives and initiatives, training, personnel management, incentives etc.

Please note that this project will be forwarded to the **Heriot Watt University** and used for educational purposes only.

Any courtesies extended to her will be appreciated.

Please contact us at the Corporate Education Centre if you require any additional information.

Yours sincerely,

**Bennel Padmore**  
*Assistant Manager,  
Corporate Education Centre  
SBCS*



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& Trincity Boulevard, Trincity  
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## Appendix B: Letter of Access



NEAL & MASSY ITC GROUP LIMITED

155 Tragarete Road,  
P.O. Box 544,  
Port of Spain, Trinidad W.I.  
Tel.: (868) 622-4551-7  
Fax: (868) 622-4551 ext. 2181

March 28 2011

Ms. Cheryl-Ann Phillips  
c/o Three Sixty Communications Limited  
63 Tragarete Road  
Port of Spain

Dear Ms. Phillips

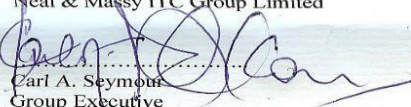
**Re: Herriot Watt University doctorate in Business Administration degree**

Further to our various conversations on the captioned matter, please be advised that the Company has no objection to its subsidiaries being the subjects of your dissertation, provided that there is adherence to the following:

- We would like to see the final documentation before it is presented to the school so that we can ensure that all information presented about the companies is accurate
- We shall want the assurance that the document will be seen only by the examiners in England, and if it is to be seen by others we would like to know by whom. Our agreeing to your request shall be conditional upon our having no objection to such individual(s) having access to the document
- If the dissertation is to be made public in any way, including being placed in the University's library, we shall require all references to the Companies' names to be removed

Please indicate whether these conditions are acceptable to you.

Yours faithfully  
Neal & Massy ITC Group Limited

  
Carl A. Seymour  
Group Executive  
Human Resources & Administration



MEMBER NEAL & MASSY GROUP

## Appendix C: Email of Continued Access

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**Cheryl Ann Phillips**

---

**From:** Carl Seymour <cseymour@neal-and-massy.com>  
**Sent:** 09 May 2013 06:36 PM  
**To:** 'Cheryl Ann Phillips'  
**Subject:** RE: AS DISCUSSED

Cheryl Ann

This serves to confirm that notwithstanding the fact that you shall soon no longer be an employee of Three Sixty Communications Limited, the approval with associated conditions as indicated in our letter of March 28 2011 remains in force.

Best regards,  
CS

Carl A. Seymour | Neal & Massy ITC Group Limited | 155 Tragarete Road, Port of Spain, Trinidad & Tobago | ☎ 1(868) 628-4010, 684-5795 (Trinidad & Tobago); 1(876) 832-0721 (Jamaica) | ✉ cseymour@neal-and-massy.com

---

**From:** Cheryl Ann Phillips [<mailto:cheryl.phillips@360comms.net>]  
**Sent:** Thursday, 09 May 2013 04:39 PM  
**To:** [cseymour@neal-and-massy.com](mailto:cseymour@neal-and-massy.com)  
**Subject:** AS DISCUSSED  
**Importance:** High

Good Day Mr. Seymour

As per the subject discussion and what I was told via telephone today, can you kindly do a letter confirming that the attached is still effective and that I will be granted access.

I am temporarily suspended from submitting anything further which is carrying out the research proposed until they receive this correspondence.

Much obliged and with thanks.

Cheryl Ann Phillips

The information in this e-mail (including attachments) is confidential and may be legally privileged. It is intended solely for the addressee. If you are not the intended recipient, any disclosure, reproduction, distribution or any action taken or omitted to be taken in reliance on the e-mail message, is prohibited and may be unlawful. If you have received this email in error, please notify the sender and delete all parts of this e-mail from your computer(s). Neal & Massy Ltd is neither liable for the proper and complete transmission of the information contained in this communication nor for any delay in its receipt.

## **Appendix D: Research Instrument**

For: Doctoral Research Segment

Heriot-Watt University,  
Edinburgh Business School Scotland UK

Dear

This survey is being conducted as part of a dissertation research project in the field of leadership, organisational culture and social networks. The research sample is based on a high technology sector company in Trinidad. Access to participants and the sanctioning of this research project has been approved by the NM ITC- Group. The results of this study are proposed to form part of a consultancy report for the Chairman of the NM ITC Division.

The researcher guarantees that each interview will be conducted in an atmosphere where the strictest confidentiality will be maintained. You are required to place all completed responses in the self-addressed envelopes provided and personally seal the contents. These will be mailed to the Dissertation Supervisor – Edinburgh Business School. The information will be processed by the external party and only the collated responses will be reported. Participants are assured that the moderator (researcher) will have no access to the information. Also, at no time will there be any reference to the names of the participants in the published research. The data collected will assist in providing an accurate assessment of the requisite leadership style(s) and corporate culture needed for improved corporate performance.

Participants are advised that the estimated completion time for this exercise is approximately 20 minutes. Also, there are no wrong or right answers to the questions asked. The questions are designed to solicit feedback on your opinions and levels of agreement.

I thank you for your participation.

Sincerely

Cheryl Ann Phillips (Doctoral Student)  
Edinburgh Business School UK, Scotland



Name:

**Section 1:** The following chart shows the list of personnel (note that in the questionnaire shown below the real names of the individuals used in the actual survey has been changed to “actor”) within the subsidiary groups of the sample company. Kindly indicate how much you interact or communicate with different people. **Please place a \* next to your name on the attached list and circle the name(s) of the people with whom you communicate.** Three (3) key questions are asked with regard to your level of interaction with these personnel. Answers will rate from: 0- to 4- Frequently.

	PLEASE CIRCLE THE BEST ANSWER REFLECTING THE LEVEL OF INTERACTION/COMMUNICATION WITH DIFFERENT PEOPLE 0=or leave blank, 1=rarely 2=sometimes 3=fairly often, 4=frequently		
	How often do you communicate with the following people on strategic/general management issues?	How often do you communicate with the following people on operational/technical issues related to the job?	How often do you interact/communicate with the following people on personal issues or as friends?
Actor 1	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 2	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 3	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 5	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 6	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 7	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 8	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 9	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 10	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 11	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4

	PLEASE CIRCLE THE BEST ANSWER REFLECTING THE LEVEL OF INTERACTION/COMMUNICATION WITH DIFFERENT PEOPLE 0=or leave blank, 1=rarely      2=sometimes      3=fairly often,      4=frequently		
	How often do you communicate with the following people on strategic/general management issues?	How often do you communicate with the following people on operational/technical issues related to the job?	How often do you interact/communicate with the following people on personal issues or as friends?
Actor 12	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 13	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 14	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 15	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 16	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 17	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 18	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 19	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 20	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 21	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 22	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 23	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 24	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 25	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4

	<p>PLEASE CIRCLE THE BEST ANSWER REFLECTING THE LEVEL OF INTERACTION/COMMUNICATION WITH DIFFERENT PEOPLE</p> <p>0= or leave blank,      1=rarely      2=sometimes      3=fairly often, 4=frequently</p>		
	How often do you communicate with the following people on strategic/general management issues?	How often do you communicate with the following people on operational/ technical issues related to the job?	How often do you interact/communicate with the following people on personal issues or as friends?
Actor 26	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 27	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 28	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 29	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 30	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 31	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Actor 32	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4

Section 2: Kindly circle the response which best describes the organisation's culture. The term organisation refers to the sample group.

The responses are rated from 0- Strongly disagree to 4 – Strongly Agree

- |  |           |
|--|-----------|
| 4. The organisation is a very personal place. It is like an extended family people share a lot of personal information and features.         | 0 1 2 3 4 |
| 5. The organisation is a very entrepreneurial place. People are willing to stick out their necks and take risks.                             | 0 1 2 3 4 |
| 6. The organisation is very results-oriented. A major concern is getting the job done. People are very competitive and achievement oriented. | 0 1 2 3 4 |
| 7. The organisation is a very controlled and structured place. Formal procedures generally, govern what people do.                           | 0 1 2 3 4 |
| 8. The senior leadership in the organisation is generally considered to exemplify, mentoring, facilitating or nurturing.                     | 0 1 2 3 4 |
| 9. The senior leadership in the organisation is generally considered to exemplify entrepreneurship, innovation or risk-taking.               | 0 1 2 3 4 |
| 10. The senior leadership in the organisation is generally considered to exemplify a no-nonsense aggressive, results-oriented focus.         | 0 1 2 3 4 |
| 11. The senior leadership in the organisation is generally considered to exemplify coordinating, organising or smooth-running efficiency.    | 0 1 2 3 4 |
| 12. The senior management in the organisation is characterised by teamwork, consensus, and participation.                                    | 0 1 2 3 4 |
| 13. The senior management style in the organisation is characterised by risk-taking innovation, freedom, and uniqueness.                     | 0 1 2 3 4 |

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| 14. The senior management style of the organisation is characterised by hard-driving competitiveness, high demands and achievement.                        | 0 | 1 | 2 | 3 | 4 |
| 15. The senior management style of the organization is characterised by hard-driving competitiveness, high demands and achievement.                        | 0 | 1 | 2 | 3 | 4 |
| 16. The senior management style in the organization is characterised by security of employment, conformity, predictability and stability in relationships. | 0 | 1 | 2 | 3 | 4 |
| 17. The glue that holds the organisation together is loyalty and mutual trust. Commitment to the organization runs high.                                   | 0 | 1 | 2 | 3 | 4 |
| 18. The glue that holds this organisation together is commitment to innovation and development. There is an emphasis on being on the cutting-edge.         | 0 | 1 | 2 | 3 | 4 |
| 19. The glue that holds the organisation together is an emphasis on Achievement and goal accomplishment.   | 0 | 1 | 2 | 3 | 4 |
| 20. The glue that holds the organisation together is formal rules and policies. Maintaining a smooth-running organisation is important.                    | 0 | 1 | 2 | 3 | 4 |
| 21. The organisation emphasizes human development. High trust, openness and participation persist.   | 0 | 1 | 2 | 3 | 4 |
| 22. The organisation emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.       | 0 | 1 | 2 | 3 | 4 |
| 23. The organisation emphasizes competitive actions and achievement hitting stretched targets and winning in the marketplace is dominant.                  | 0 | 1 | 2 | 3 | 4 |
| 24. The organisation emphasizes permanence and stability. Efficiency, control and smooth-running operations are important.                                 | 0 | 1 | 2 | 3 | 4 |
| 25. The organisation defines success on the basis of the development of human resources, teamwork, employee commitment and concern for people.             | 0 | 1 | 2 | 3 | 4 |

26. The organisation defines success on the basis of having the most  
Unique or newest products. It is a product leader and innovator. 0 1 2 3 4
27. The organisation defines success on the basis of winning in the  
market-place and out-pacing the competition. Competitive market  
leadership is key. 0 1 2 3 4
28. The organisation defines success on the basis of efficiency, dependable  
Delivery, smooth scheduling and low-cost production are critical. 0 1 2 3 4

**Section 3:** This section is used to describe your personal leadership style as you perceive it. Please answer all items in this Section. If an item is irrelevant or you are unsure of how to answer it, please leave it blank. Answers are rated using the following scale from: 0 – Not at all to 4 – Frequently if not always

Kindly indicate by circling the **responses below which one best describes your personal leadership style.**

Rating – Not at all (0), Once in while (1) Sometimes (2), Fairly Often (3), Frequently (4), Always (5).

29. I provide others with assistance in exchange for my efforts. 0 1 2 3 4
30. I re-examine critical assumptions to question whether they are appropriate. 0 1 2 3 4
31. I fail to interfere until problems become serious. 0 1 2 3 4
32. I focus attention on irregularities, makes mistakes, exceptions and  
deviates from standards. 0 1 2 3 4
33. I avoid getting involved when important issues arise. 0 1 2 3 4
34. I talk about my most important values and beliefs. 0 1 2 3 4
35. I am absent when needed. 0 1 2 3 4
36. I seek differing perspectives when solving problems. 0 1 2 3 4

37. I talk optimistically about the future.	0	1	2	3	4
38. I instil pride, in others for being associated with me.	0	1	2	3	4
39. I discuss in specific terms who is responsible for achieving performance targets.	0	1	2	3	4
40. I wait for things to go wrong before taking action.	0	1	2	3	4
41. I talk enthusiastically about what needs to be accomplished.	0	1	2	3	4
42. I specify the importance of having a strong sense of purpose.	0	1	2	3	4
43. I spend time teaching and coaching.	0	1	2	3	4
44. I make clear about what can expect when performance goals are achieved.	0	1	2	3	4
45. I show that I am a firm believer if ' ain't broke don't fix it.	0	1	2	3	4
46. I go beyond self-interest for the good of the group.	0	1	2	3	4
47. I treat others as individuals than just a member of a group.	0	1	2	3	4
48. I demonstrate that problems must become chronic before taking action.	0	1	2	3	4
49. I act in ways that build others respect for me.	0	1	2	3	4
50. I concentrate my full attention on dealing with mistakes, complaints and failures.	0	1	2	3	4
51. I consider the moral and ethical consequences of decisions.	0	1	2	3	4
52. I keep track of all mistakes.	0	1	2	3	4
53. I display a sense of power and confidence.	0	1	2	3	4
54. I articulate a compelling vision of the future.	0	1	2	3	4
55. I direct my attention towards failures to meet standards	0	1	2	3	4
56. I avoid making decisions.	0	1	2	3	4

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| 57. I consider an individual as having different needs, abilities and aspirations from others. | 0 | 1 | 2 | 3 | 4 |
| 58. I get others to look at problems from different angles.                                    | 0 | 1 | 2 | 3 | 4 |
| 59. I help others to develop their strengths.  | 0 | 1 | 2 | 3 | 4 |
| 60. I suggest new ways of looking at how to complete assignments.                              | 0 | 1 | 2 | 3 | 4 |
| 61. I delay responding to urgent questions.  | 0 | 1 | 2 | 3 | 4 |
| 62. I emphasize the importance of having a collective sense of mission.                        | 0 | 1 | 2 | 3 | 4 |
| 63. I express satisfaction when I meet expectations.   | 0 | 1 | 2 | 3 | 4 |
| 64. I express confidence that goals will be achieved.  | 0 | 1 | 2 | 3 | 4 |

The following statements refer to your general feeling of your current work. Please circle a number which best represents the following statements. Answers rate from (0 –Strongly disagree to 4 – Strongly Agree).

Strongly Disagree, 1- Disagree, 2- Neutral – 3- Agree and 4- Strongly Agree

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| 65. I feel emotionally drained from my work.   | 0 | 1 | 2 | 3 | 4 |
| 66. I feel used up at the end of the workday.  | 0 | 1 | 2 | 3 | 4 |
| 67. I feel tired when I get up in the morning and have to face another day on the job. | 0 | 1 | 2 | 3 | 4 |
| 68. Working all day is really a strain for me.   | 0 | 1 | 2 | 3 | 4 |
| 69. I can effectively solve problems that arise in my work.                            | 0 | 1 | 2 | 3 | 4 |
| 70. I feel burned out from my work.  | 0 | 1 | 2 | 3 | 4 |



- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| 71. I feel I am making an effective contribution to what this organisation does. | 0 | 1 | 2 | 3 | 4 |
| 72. I have become less interested in my work since I started this job.           | 0 | 1 | 2 | 3 | 4 |
| 73. I have become less enthusiastic about my work.                               | 0 | 1 | 2 | 3 | 4 |
| 74. In my opinion, I am good at my job.  | 0 | 1 | 2 | 3 | 4 |
| 75. I feel exhilarated when I accomplish something at work.                      | 0 | 1 | 2 | 3 | 4 |
| 76. I have accomplished many worthwhile things in this job.                      | 0 | 1 | 2 | 3 | 4 |
| 77. I just want to do my job and not be bothered.                                | 0 | 1 | 2 | 3 | 4 |
| 78. I have become more cynical about whether my work contributes anything.       | 0 | 1 | 2 | 3 | 4 |
| 79. I doubt the significance of my work.   | 0 | 1 | 2 | 3 | 4 |
| 80. At work, I feel confident that I am effective in getting things done.        | 0 | 1 | 2 | 3 | 4 |
| 81. I feel confident that my department is functioning at optimum level.         | 0 | 1 | 2 | 3 | 4 |
| 82. In my opinion, my department success is evident by its performance.          | 0 | 1 | 2 | 3 | 4 |

**Kindly tick the appropriate check box:**

Sex: ( ) Male ( ) Female

Length of time employed: ( ) 0- 3 years ( ) 4 – 7 years ( ) 7 and over

**Thank you for completing this survey.**

## Appendix E: Excerpt from Alarcon Meta-Analysis

— Extract from Alarcon (2011)

The meta-analysis **examined 231 scholarly published** articles using the MBI family of work-related burnout scales. The result of the meta-analysis supports all three hypotheses. The results of the meta-analysis are summarised in Table 13 (extracted from Alarcon 2011, p.552).

*Table 14: Excerpt from Alarcon 2011 p. 555*

Variable	<i>k</i>	<i>N</i>	Mean <i>r</i>	SD <i>r</i>	Mean $\rho$	SD $\rho$	% Var.	95% confidence interval
<i>Emotional exhaustion</i>								
<i>Demands</i>								
Role ambiguity	51	22,145	.26	.08	.32	.10	22.72	.29, .34
Role conflict	37	13,568	.42	.09	.53	.11	22.04	.49, .56
Workload	86	51,529	.40	.12	.49	.14	12.97	.45, .52
<i>Resources</i>								
Control	56	33,297	-.21	.12	-.26	.14	10.83	-.29, -.22
Autonomy	34	17,165	-.20	.07	-.24	.09	23.73	-.27, -.20
<i>Attitudes</i>								
Turnover intentions	34	12,607	.33	.16	.39	.18	8.45	.32, .45
Job satisfaction	82	32,517	-.44	.10	-.51	.11	16.39	-.53, -.48
Organizational commitment	39	17,550	-.30	.12	-.36	.14	12.44	-.40, -.31
<i>Cynicism</i>								
<i>Demands</i>								
Role ambiguity	37	16,616	.24	.07	.31	.09	29.59	.28, .33
Role conflict	29	10,178	.29	.04	.40	.05	62.85	.38, .41
Workload	58	39,786	.24	.09	.31	.11	18.77	.28, .33
<i>Resources</i>								
Control	39	25,847	-.22	.06	-.29	.08	29.37	-.31, -.26
Autonomy	23	11,803	-.23	.06	-.31	.08	31.77	.27, .34
<i>Attitudes</i>								
Turnover intentions	18	5,587	.25	.11	.32	.13	19.67	.25, .38
Job satisfaction	49	18,176	-.37	.11	-.47	.14	7.44	-.50, -.43
Org. commitment	39	17,550	-.30	.12	-.36	.14		-.40, -.31
<i>Reduced personal accomplishment</i>								
<i>Demands</i>								
Role ambiguity	39	16,745	.24	.10	.31	.13	16.73	.26, .35
Role conflict	28	9,076	.14	.06	.18	.08	7.20	.15, .20
Workload	42	28,763	.08	.08	.11	.10	17.39	.08, .14
<i>Resources</i>								
Control	34	19,447	-.30	.10	-.39	.13	15.39	-.43, -.34
Autonomy	15	8,440	-.28	.06	-.38	.08	28.23	-.42, -.33
<i>Attitudes</i>								
Turnover intentions	12	4,201	.19	.07	.24	.09	34.79	.18, .29
Job satisfaction	44	15,626	-.31	.11	-.39	.14	16.04	-.43, -.34
Org. commitment	16	4,810	-.30	.10	-.37	.13	23.96	-.43, -.30

Note. *k* = number of samples, *N* = total sample size, Mean *r* = average weighted correlation coefficient, Mean  $\rho$  = average weighted correlation coefficient corrected for unreliability in both the predictor and criterion, % Var. = percentage of variance due to artifacts.

## **Appendix F: Correlations and Descriptive Statistics**

Use of Descriptive Statistics, Correlation Matrices and Cronbach Alphas have been commonly used in statistical analyses and research. In particular, use of descriptive statistics is normally employed to summarise sample characteristics such as central tendency and variation (example: mean, standard deviation).

This is often done with Likert type questionnaires such as the current test instrument and is reported in many research studies (see Laschinger et al. 2012; Laschinger and Fida 2014 and Hunsaker et al. 2015). The computation of descriptive statistics in this research used the Statistical Package for Social Sciences (SPSS). One of the key reasons to report descriptive statistics is to show sufficient variation in order to allow inferential statistical tests or to identify a particular item that might be different from other items in a scale.

Another statistical measurement utilised in this research was the widely used Pearson correlation co-efficient in statistical research. Pearson correlation coefficient, also known as the product moment correlation coefficient, measures the strength of a linear association between two linear variables normally denoted by “sample by  $r$ , while in the population from which the sample was drawn it is represented by  $\rho$ .” (Sedwick 2012). In Pearson’s correlations, the measured data is assessed to determine: i) best fit between the data of two variables, ii) how many of these data points within range to the line of best fit, iii) possible ranges in values from +1 to -1, iv) values of 0 are interpreted that no association exists between the variables, v) values greater than 0 indicate that a positive relationship exists while, vi) values less than 0 (i.e: -1) indicate a negative relationship exist (see Sedwick 2012).

Since the present study used sub-scales the correlation matrix is useful to examine whether correlations exist with the individual items of a sub-scales as they should. For example, a reverse coded item should result in a negative correlation with other items in the scale. Central tendency, variation and correlations between items in sub-scales are reported in the Appendix.

Another statistical measure reported in the study is the Cronbach Alpha which examines the internal reliability of a scale, and is widely reported in scholarly research that utilize such scales (see Tavakol and Dennick 2011). Bonett and Wright (2014) states that it is “one of the most widely used measure of reliability in the social and organisational science” (Bonett and Wright 2014, p.3). While, Heo et al. (2015) report that while Cronbach Alphas are widely used in clinical research, there is a difference between consistency and reliability as both were not interchangeable (see Heo et al. 2015). Researchers, sometimes reported problems with the discriminant validity of scales with Cronbach alphas below 0.70, and values between 0.60 and 0.70 are considered only fair (see Heinitz et al. 2005 and Bakker et al. 2002). However, most modern research studies generally maintain that a minimum of 0.70 represents high internal reliability (see Heritage et al. 2014; Tavakol and Dennick 2011 and Peterson and Kim 2013). The present research used a 0.75 standard. Cronbach Alphas are reported in Chapter 4.

#### *MBI-GS: Emotional Exhaustion*

In the tables 15 and 16, the individual items of the emotional exhaustion dimension are:

- Question 65 -individuals' express being emotionally drained from the work tasks,
- Question 66-individuals' voice feeling “emotionally spent” by the end of the day,
- Question 67- individuals' express feelings of tiredness when faced with going into the workplace,
- Question 68- individuals' express feeling that completing a workday is strenuous,
- Question 70 – the individual comes to term that they are burnt out.

*Table 15: Correlations MBI-GS Scale- Emotional Exhaustion*

	Q65	Q66	Q67	Q68	Q70
Q65 Pearson Correlation	1.00	0.87**	0.69**	0.77**	0.72**
Q66 Pearson Correlation	0.87**	1.00	0.63**	0.66**	0.70**
Q67 Pearson Correlation	0.69**	0.63**	1.00	0.71**	0.76**
Q68 Pearson Correlation	0.77**	0.66**	0.71**	1.00	0.71**
Q70 Pearson Correlation	0.72**	0.70**	0.76**	0.71**	1.00

\*\*= prob<0.01, \*=prob<0.05 (2-tailed)

In table 15 above, as expected, all sub-scale questions tested significantly with all correlations being statistically significant at < 0.01.

*Table 16: Descriptive Statistics The MBI-GS Scale- Emotional Exhaustion*

	N	Mean	Std. Dev
Q65	31	1.97	1.22
Q66	31	1.94	1.32
Q67	31	1.26	1.32
Q68	31	1.29	1.10
Q70	31	1.35	1.14

From Table 16, it can be observed that all the items had one missing answer (N-31) from the sample of 32, however, these missing responses appeared random, and were from different respondents so it was possible to calculate an average with the missing items for this sub-scale for all thirty-two respondents. This is also the situation with all the sub-scales described in the MBI- GS instrument.

*MBI-GS: Cynicism*

Tables 17 and 18, provide the correlations and descriptive statistics for the MBI-GS sub-scale of Cynicism. In the Tables, the individual items relating to this sub-scale measurement are:

- Question 72 - the individual expresses feelings of lost interest since starting the job,  
Question 73- the individual expresses feeling of a loss in work enthusiasm,  
Question 77- the individual expresses a willingness to be isolated from others within the workspace,  
Question 78 – the individual is aware of deliberately expressing cynicism to work and work contributions,  
Question 79- the individual expresses a feeling of doubt about his individual work significance and contribution.

*Table 17: Correlations MBI-GS Scale- Cynicism*

	Q72	Q73	Q77	Q78	Q79
Q72 Pearson Correlation	1.00	0.87**	0.65**	0.83**	0.79**
Q73 Pearson Correlation	0.87**	1.00	0.66**	0.86**	0.67**
Q77 Pearson Correlation	0.65**	0.66**	1.00	0.62**	0.62**
Q78 Pearson Correlation	0.83**	0.86**	0.62**	1.00	0.67**
Q79 Pearson Correlation	0.79**	0.67**	0.62**	0.67**	1.00

\*\*= prob<0.01, \*=prob<0.05 (2-tailed)

*Table 18: Descriptive Statistics The MBI-GS Scale - Cynicism*

	N	Mean	Std. Dev
Q72	31	1.10	1.30
Q73	31	1.13	1.23
Q77	31	1.26	1.15
Q78	30	0.87	0.94
Q79	31	0.87	1.12

As expected, the correlations between all the individual items within the sub-scale MBI-GS scale: Cynicism, are statistically significant.

*MBI-GS: Professional Personal Efficacy*

Tables 19 and 20, provide the correlations and descriptive statistics for the MBI-GS sub-scale Professional Personal Efficacy. The individual items are:

Question 69 - individuals express feeling empowered to solve work problems

Question 71- individual's express optimism in their contribution to the organisational workload,

Question 74 - individual's express confidence of being good at their jobs,

Question 76 – individuals being confident that they have accomplished many worthwhile things within the organisation,

Question 80- individuals express feeling confident in getting things done.

*Table 19: Correlations The MBI-GS Scale- Professional Personal Efficacy*

	Q69	Q71	Q74	Q75	Q76	Q80
Q69 Pearson Correlation	1.00	0.50 <sup>*</sup>	0.22	0.08	0.40 <sup>*</sup>	0.43 <sup>*</sup>
Q71 Pearson Correlation	0.50 <sup>**</sup>	1.00	0.36 <sup>*</sup>	0.02	0.57 <sup>**</sup>	0.40 <sup>*</sup>
Q74 Pearson Correlation	0.22	0.36 <sup>*</sup>	1.00	0.33	0.56 <sup>**</sup>	0.24
Q75 Pearson Correlation	0.08	0.02	0.33	1.00	0.48 <sup>**</sup>	0.23
Q76 Pearson Correlation	0.40 <sup>*</sup>	0.57 <sup>*</sup>	0.56 <sup>**</sup>	0.48 <sup>**</sup>	1.00	0.42 <sup>*</sup>
Q80 Pearson Correlation	0.43 <sup>*</sup>	0.40 <sup>*</sup>	0.24	0.23	0.42 <sup>*</sup>	1.00

\*\*= prob<0.01, \*=prob<0.05 (2-tailed)

*Table 20: Descriptive Statistics The MBI-GS Scale- Professional Personal Efficacy*

	N	Mean	Std. Deviation
Q69	32	3.22	0.42
Q71	32	3.47	0.57
Q74	31	3.13	0.85
Q75	32	3.19	0.64
Q76	32	3.31	0.54
Q80	32	3.41	0.56

Again, as expected, there are significant correlations between the individual items within the MBI GS scale: Professional Personal Efficacy. However, within this sub-scale, some of the correlations appear to be lower and not statistically significant.



### *Leadership Scale: MLQ-5x- Transformational Leadership*

Under the MLQ- 5x Transformational Leadership category, the dimensions are:

- i) Idealised Influence Attributes- which describe the leadership attributes followers give to their leaders.
- ii) Idealised Influence Behaviours- which best describes the demonstrated charismatic actions of the leader expressed through the sharing of his/her most important values and beliefs, collective mission, purpose, and ethics.
- iii) Inspirational Motivation –refers to the leader being considered by followers as a role-model. The leader is said to encourage/mentor staff to achieve personal and organisation goals and possess a high degree of optimism and enthusiasm towards achieving the vision.
- iv) Intellectual Stimulation –describes the leader as someone who promotes individual rational thinking, creativity, problem solving and intelligence amongst his employees.
- v) Individualised Consideration – this sub-scale best represents leaders who view and treat followers as individuals and not just as collective members of a group.

#### *MLQ-5x- Transformational Leadership - Idealised Influence Attributes*

Tables 21 and 22, show the correlations and descriptive statistics of the individual items for the sub-scale of Transformational Leadership- Idealised Influence Attributes. The individual items which form this category are:

Question 38-which refers to the leader instilling pride in others for being associated with him,

Question 46–which describes a leader going beyond the good of the group,

Question 53- which refers to the leader displaying a sense of power and confidence and

Question 49-which describes acting in ways to win the respect of their staff.

*Table 21: MLQ- 5x Correlations Idealised Influence Attributes*

	Q38	Q46	Q49	Q53
Q38 Pearson Correlation	1.00	0.07	-0.13	0.35
Q46 Pearson Correlation	0.07	1.00	0.32	0.14
Q49 Pearson Correlation	-0.13	0.32	1.00	-0.19
Q53 Pearson Correlation	0.35	0.14	-0.19	1.00

\*\*= prob<0.01, \*=prob<0.05 (2-tailed)

*Table 22: MLQ- 5x Descriptive Statistics Idealised Influence Attributes*

	N	Mean	Std. Deviation
Q38	28	2.21	1.23
Q46	31	3.39	0.50
Q49	32	3.03	0.74
Q53	30	2.70	0.95

As a sub-scale, we would expect significant correlations between the individual items within the scale. However, the results from Table 21 show that no statistically significant correlations exist between the individual questions used in the Transformational Leadership - Idealised Influence Attributes sub-scale.

#### *MLQ-5x- Transformational Leadership Idealised Influence Behaviours*

Tables 23 and 24, show the correlations and descriptive statistics of the individual items for the sub-scale of Transformational Leadership - Idealised Influence Behaviours. The individual items which make up this category are:

Question 34 - which highlights the most important value and beliefs,  
 Question 42 - the leader outlines the importance of having a strong sense of purpose,  
 Question 51- considers the moral and ethical consequences of decisions and  
 Question 62 - which emphasizes the importance of a collective mission

*Table 23: MLQ-5x Correlations Idealised Influence Behaviours*

	Q34	Q42	Q51	Q62
Q34 Pearson Correlation	1.00	0.58**	0.30	-0.04
Q42 Pearson Correlation	0.58**	1.00	0.25	0.26
Q51 Pearson Correlation	0.30	0.25	1.00	0.14
Q62 Pearson Correlation	-0.04	0.26	0.14	1.00

\*\*= prob<0.01, \*=prob<0.05 (2-tailed)

*Table 24: Descriptive Statistics Idealised Influence Behaviours*

	N	Mean	Std. Deviation
Q34	31	2.39	0.96
Q42	32	3.22	0.79
Q51	31	3.39	0.67
Q62	31	2.90	0.75

The results from Table 23, indicate only one significant correlation. No other significant correlations were found.

*MLQ- 5x- Transformational Leadership - Inspirational Motivation*

Tables 25 and 26, show the descriptive statistics and correlations of the individual items for the sub-scale of Transformational Leadership - Inspirational Motivation. The individual items which make up this category are:

Question 37 – the leader speaking optimistically about the future,

Question 41 - the leader talking enthusiastically about what needs to be accomplished,

Question 54 - leaders who articulate a compelling future vision and

Question 64 – leaders expressing confidence that goals will be achieved.

*Table 25: MLQ-5x Correlations Inspirational Motivation*

	Q37	Q41	Q54	Q64
Q37 Pearson Correlation	1.00	0.24	0.43*	0.34
Q41 Pearson Correlation	0.24	1.00	0.44*	0.62**
Q54 Pearson Correlation	0.43*	0.44*	1.00	0.58**
Q64 Pearson Correlation	0.34	0.62**	0.58**	1.00

\*\*= prob<0.01, \*=prob<0.05 (2-tailed)

*Table 26: Descriptive Statistics Inspirational Motivation*

	N	Mean	Std. Deviation
Q37	31	3.19	0.70
Q41	32	3.31	0.64
Q54	31	2.81	0.79
Q64	32	3.44	0.62

The results of Table 25 indicate many significant correlations among the individual items.

*MLQ- 5x – Transformational Leadership Intellectual Stimulation*

Tables 27 and 28, show the correlations and descriptive statistics of the individual items for the sub-scale of Transformational Leadership - Idealised Intellectual Stimulation. The individual items which form this category are:

Question 30 - the leader re-examining critical assumptions to question whether they are appropriate,

Question 36 - the leader seeks differing perspectives to solving problems,

Question 58 – the leader gets others to look at problems from different angles and

Question 60 – the leader suggests to followers’ new ways of looking at how to complete assignments.

*Table 27: MLQ-5x Correlations Intellectual Stimulation*

	Q30	Q36	Q58	Q60
Q30 Pearson Correlation	1.00	0.33	0.23	0.12
Q36 Pearson Correlation	0.33	1.00	0.04	0.19
Q58 Pearson Correlation	0.23	0.04	1.00	0.34
Q60 Pearson Correlation	0.12	0.19	0.34	1.00

\*\*= prob<0.01, \*=prob<0.05 (2-tailed)

*Table 28: MLQ-5x Descriptive Statistics Intellectual Stimulation*

	N	Mean	Std. Deviation
Q30	32	2.88	0.79
Q36	32	3.16	0.57
Q58	32	3.13	0.61
Q60	32	2.97	0.65

The results of Table 27, indicate no statistically significant correlation exists between the individual items tested.

### *MLQ-5x- Transformational Leadership Individualised Consideration*

The last sub-scale in the MLQ-5x dimension of “transformational leadership” is the sub-scale of Transformational Leadership - Individualised Consideration. Tables 28 and 29 provide the correlations and descriptive statistics of the individual items for the sub-scale of Transformational Leadership - Individualised Consideration. The individual items which form this category are:

Question 43 - the leader spending time teaching and coaching,

Question 47 - describes the leader treating others as individuals rather than just a member of a group,

Question 57 - describes the leader as considering others as an individual with different needs, abilities and aspirations from the rest, and

Question 59 - refers to the leader helping others to develop their strengths.

*Table 29: MLQ-5x Correlations Individualised Consideration*

	Q43	Q47	Q57	Q59
Q43 Pearson Correlation	1.00	0.06	-0.10	0.56**
Q47 Pearson Correlation	0.06	1.00	0.11	0.15
Q57 Pearson Correlation	-0.10	0.11	1.00	0.16
Q59 Pearson Correlation	0.56**	0.15	0.16	1.00

\*\*= prob<0.01, \*=prob<0.05 (2-tailed)

*Table 30: MLQ-5x Descriptive Statistics Individualised Consideration*

	N	Mean	Std. Deviation
Q43	32	3.13	0.75
Q47	32	3.13	1.04
Q57	30	3.40	0.86
Q59	31	3.10	0.60

The results of Table 29, indicate only one significant correlation, between Question 59- leaders helping others develop their strengths and Question 43 - leaders who spend time teaching and coaching.

*MLQ-5x- Transactional Leadership - Contingent Reward*

Tables 31 and 32, provide the correlation and descriptive statistics results for the transactional leadership sub-scale of Contingent Reward. The individual items which form this category are:

Question 29 - which tests the leader's belief that assistance is provided to staff in exchange for his efforts,

Question 39 – which examines whether the leader's discussion with his staff is specific as to determining the achievement of performance targets and responsibility, and

Question 44 - which reviews whether the leader is clear to individuals in articulating the rewards when performance targets are met.

*Table 31: MLQ-5x Correlations Contingent Reward*

	Q29	Q39	Q44
Q29 Pearson Correlation	1.00	0.05	-0.00
Q39 Pearson Correlation	0.05	1.00	0.66**
Q44 Pearson Correlation	-0.00	0.66**	1.00

\*\*= prob<0.01, \*=prob<0.05 (2-tailed)

*Table 32: MLQ-5x Descriptive Statistics Contingent Reward*

	N	Mean	Std. Deviation
Q29	30	2.73	1.23
Q39	30	3.10	0.92
Q44	31	2,90	1.11

The results from Table 31, show a statistically significant correlation between Question 39- leaders' dialogue with staff is specific to determining "performance targets" and objectives, and Question 44 – leader's clarity to staff in communicating rewards when targets are met.

*MLQ-5x- Transactional Leadership – Management by Exception Active*

Tables 33 and 34, provide the correlation and descriptive statistics results for the Transactional leadership sub-scale of Management by Exception Active. The individual items which form this category are:

Question 50 - the leader's attention is being directed towards dealing with mistakes, complaints, and failures.

Question 52 - the leader acknowledging that he keeps track of all staff mistakes,

Question 55 - the leader directs his focus towards staff failure to meet standards

*Table 33: MLQ-5x Correlations Management by Exception Active*

	Q50	Q52	Q55
Q50 Pearson Correlation	1.00	-0.12	0.37*
Q52 Pearson Correlation	-0.12	1.00	0.16
Q55 Pearson Correlation	0.37*	0.16	1.00

\*\*= prob<0.01, \*=prob<0.05 (2-tailed)



*Table 34: MLQ-5x Descriptive Statistics Management by Exception Active*

	N	Mean	Std. Deviation
Q50	29	1.90	1.11
Q52	31	1.61	1.12
Q55	32	1.38	0.94

The results from Table 33, show a low, but statistically significant correlation between individual responses to Question 55- the leader directs his focus from staff failure to meet standards and Question 50 – the leader’s direction is being directed to mistakes, complaints, and failures. The other correlations are not significant.

*Leadership Scale: MLQ-5x-Passive Avoidant Leadership*

In the MLQ- 5x Passive-Avoidant Leadership category, the dimensions are:

- i) Management by Exception Passive, where leadership exhibits reluctance to act, and
- ii) Laissez Faire, where the leadership is for the most part absent or lacking within the organisation.

*MLQ-5x- Passive-Avoidant Leadership - Management by Exception Passive*

The individual items which make up this category are:

Question 31 - where the leader states that his preferred Leadership is one which fails to interfere only if problems are serious,

Question 40 - where the leader states that he waits for things to go wrong before taking action,

Question 45 - where the leader expresses the belief that something has to be broken before it is fixed, and

Question 48 - where the leader demonstrates that problems must become chronic prior to taking action.

Tables 35 and 36, provide the correlation and descriptive statistics results for the Passive-Avoidant Leadership sub-scale of Management by Exception Passive.

*Table 35: MLQ-5x Correlations Management by Exception Passive*

	Q31	Q40	Q45	Q48
Q31 Pearson Correlation	1.00	0.42*	0.10	0.32
Q40 Pearson Correlation	0.42*	1.00	0.36*	0.20
Q45 Pearson Correlation	0.10	0.36*	1.00	0.49**
Q48 Pearson Correlation	0.32	0.20	0.49**	1.00

\*\*= prob<0.01, \*=prob<0.05 (2-tailed)

*Table 36: MLQ-5x Descriptive Statistics Management by Exception Passive*

	N	Mean	Std. Deviation
Q31	32	1.06	0.91
Q40	32	0.50	0.76
Q45	31	1.25	1.18
Q48	31	0.61	1.09

The results from Table 35, show two statistically significant, but low correlations. The highest correlation was 0.49 between Question 45 – the leader expressing the belief that something has to be broken before it is fixed and Question 48 – the leader demonstrating that things have to become chronic prior to taking action.

*MLQ-5x- Passive-Avoidant Leadership- Laissez-Faire*

The individual items which make up this category are:

Question 33 - the leader avoids getting involved when important issues arise,

Question 35 - the leader chooses to be absent when needed,

Question 56 - the leader avoids making decisions and

Question 61- the leader delays in responding to urgent questions.

Tables 37 and 38, provide the correlation and descriptive statistics results for the Passive-Avoidant Leadership sub-scale of Laissez-Faire.

*Table 37: Correlations MLQ-5x Laissez-Faire*

	Q33	Q35	Q56	Q61
Q33 Pearson Correlation	1.00	0.57**	0.48**	0.25
Q35 Pearson Correlation	0.57**	1.00	0.42*	0.62**
Q56 Pearson Correlation	0.48**	0.42*	1.00	0.34
Q61 Pearson Correlation	0.25	0.62**	0.34	1.00

\*\*= prob<0.01, \*=prob<0.05 (2-tailed)

*Table 38: MLQ-5x Descriptive Statistics Laissez Faire*

	N	Mean	Std. Deviation
Q33	32	0.28	0.52
Q35	32	0.44	0.76
Q56	31	0.58	1.03
Q61	30	0.73	0.83

The results of Table 37, indicate there are many significant correlations among the individual items.

### *OCAI – Clan Culture*

Tables 39 and 40, show the correlation and descriptive statistics results for OCAI- Clan Culture. The individual items which make up this sub-scale are:

Question 4 – the organisation is viewed as an extended family, people share personal info and features,

Question 8 - the senior management of the organisation as mentoring, flexible and nurturing,

Question 12 - the leadership of the organisation as based on teamwork, participation and consensus-based,

Question 17 - the foundation glue of the organisation as based on loyalty, mutual trust, and high commitment,

Question 21 - the overall organisation culture as focused on human development, high levels of trust, participation, and openness,

Question 25 - the individual's perception of the organisation's success as focused on human resource development, staff commitment and overall concern for people.

*Table 39: Correlations OCAI -Clan*

	Q4	Q8	Q12	Q17	Q21	Q25
Q4 Pearson Correlation	1.00	0.20	0.54**	0.42*	0.42*	0.15
Q8 Pearson Correlation	0.20	1.00	0.46**	0.40*	0.63**	0.63**
Q12 Pearson Correlation	0.54**	0.46**	1.00	0.45*	0.34	0.28
Q17 Pearson Correlation	0.42*	0.40*	0.45*	1.00	0.64**	0.57**
Q21 Pearson Correlation	0.42*	0.63**	0.34	0.64**	1.00	0.61**
Q25 Pearson Correlation	0.15	0.63**	0.28	0.57**	0.61**	1.00

\*\*= prob<0.01, \*=prob<0.05 (2-tailed)

*Table 40: Descriptive Statistics OCAI-Clan*

	N	Mean	Std. Deviation
Q4	32	2.28	0.89
Q8	32	2.72	0.81
Q12	32	2.75	0.76
Q17	32	2.53	0.88
Q21	32	2.56	0.95
Q25	32	2.28	0.89

The results of Table 39, show highly statistical significant correlations among the items ranging from 0.54 to 0.64 (prob<0.01, 2-tailed). This is what is expected for items within a sub-scale.

### *OCAI – Adhocracy Culture*

Tables 41 and 42, provide the correlation and descriptive statistics results for OCAI-Adhocracy Culture. The individual items which make up this sub-scale are:

Question 5 – the organisation is perceived as dynamic and risk-taking,

Question 9 – the senior leadership team are perceived as generally exemplifying entrepreneurship, innovation, and risk,

Question 13- the senior management’s Leadership is characterised as individual risk taking and innovative,

Question 18 - the individual perceives that foundation glue of the organisation rests on its commitment to innovation and cutting-edge development,

Question 22 – the organisation is perceived to focus on new resource acquisition, and prospecting for new valued opportunities,

Question 26 - the organisation is seen to attribute its success to product leadership and innovation.

*Table 41: Correlations OCAI - Adhocracy*

	Q5	Q9	Q13	Q18	Q22	Q26
Q5 Pearson Correlation	1.00	0.48**	0.50**	0.22	0.31	0.36*
Q9 Pearson Correlation	0.48**	1.00	0.71**	0.48**	0.55**	0.17
Q13 Pearson Correlation	0.50**	0.71**	1.00	0.53**	0.55**	0.52**
Q18 Pearson Correlation	0.22	0.48**	0.53**	1.00	0.46**	0.39*
Q22 Pearson Correlation	0.31	0.55**	0.55**	0.46**	1.00	0.23
Q26 Pearson Correlation	0.36*	0.17	0.52**	0.39*	0.23	1.00

\*\*= prob<0.01, \*=prob<0.05 (2-tailed)

*Table 42: Descriptive Statistics OCAI- Adhocracy*

	N	Mean	Std. Deviation
Q5	31	2.13	1.02
Q9	31	2.48	0.96
Q13	32	2.16	0.88
Q18	32	2.38	0.83
Q22	32	2.63	0.79
Q26	32	2.22	0.83

The results of Table 41 for OCAI - Adhocracy Culture reflects statistically significant values ranging from 0.50 to 0.71. The highest significantly correlated individual responses result was 0.71 between Question 13- where the individual perceives the senior management as risk-taking, innovative and unique and Question 9-where the individual perceives the senior management as exemplifying innovation, risk-taking and entrepreneurship.

*OCAI – Market Orientation Culture*

Tables 43 and 44, provide the descriptive statistics and correlations for OCAI- Market Orientation Culture. The individual items which make up this sub-scale are:

Question 6 - the organisation and staff are viewed to be highly market competitive, results oriented and focused on getting the job done,

Question 10 - the organisation's senior leadership are viewed as results driven, no nonsense and aggressively focused,

Question 14 - the style of the senior management is viewed as hard driving, high demand achievement oriented and competitive,

Question 19 – the foundation principle binding the organisation is perceived to be based on achievement and goal accomplishment,

Question 23 - the organisation's emphasis is based on hitting stretch targets and marketplace wins/dominance.

Question 27- the organisation views success on the basis of product innovation, and leading through unique product design.

*Table 43: Correlations OCAI Market Orientation*

	Q6	Q10	Q14	Q19	Q23	Q27
Q6 Pearson Correlation	1.00	0.32	0.45**	0.29	0.59**	0.23
Q10 Pearson Correlation	0.32	1.00	0.48**	0.45*	0.37*	0.41*
Q14 Pearson Correlation	0.45**	0.48**	1.00	0.64**	0.49**	0.35*
Q19 Pearson Correlation	0.29	0.45*	0.63**	1.00	0.26	0.51**
Q23 Pearson Correlation	0.59**	0.37*	0.49**	0.26	1.00	0.30
Q27 Pearson Correlation	0.23	0.41*	0.35*	0.51**	0.30	1.00

\*\*= prob<0.01, \*=prob<0.05 (2-tailed)

*Table 44: Descriptive Statistics OCAI - Market Orientation*

	N	Mean	Std. Deviation
Q6	32	2.94	0.84
Q10	31	2.39	0.96
Q14	32	2.88	0.83
Q19	32	3.00	0.67
Q23	32	3.09	0.73
Q27	32	2.88	0.94



The results from Table 43, show several statistically significant correlations. The highest correlation is 0.64 between Question 19 – where the individual perceives that the glue that holds the organisation together is based on achievement and goal attainment and Question 14- the management style of the organisation is perceived as hard driving, demand-oriented and competitive.

#### *OCAI- Hierarchy Culture*

Tables 45 and 46, provide the correlation and descriptive statistics results for OCAI- Hierarchy Culture. The individual items which make up this sub-scale are:

Question 7 - the culture of the organisation is perceived as a very controlled and structured place with formal procedures,

Question 11 - the organisation senior leadership team exemplifies coordination, organising, and efficiency,

Question 16 – the organisation’s senior management team as defined by its security of employment, conformity, productivity and stable relationships,

Question 20 – the foundation principles holding the organisation as built on formal rules and procedures, maintenance and efficient operations are important,

Question 24 - the organisation’s emphasis is permanence, stability, efficiency control and smooth operations,

Question 28 – the organisation as defined by its success on low-cost production, efficient scheduling, and dependable delivery.

*Table 45: Correlations OCAI- Hierarchy*

	Q7	Q11	Q15	Q20	Q24	Q28
Q7 Pearson Correlation	1.00	0.18	0.01	0.40 <sup>*</sup>	0.35	0.32
Q11 Pearson Correlation	0.18	1.00	-0.01	0.32	0.48 <sup>**</sup>	0.55 <sup>**</sup>
Q15 Pearson Correlation	0.08	-0.01	1.00	0.21	0.04	0.00
Q20 Pearson Correlation	0.40 <sup>*</sup>	0.32	0.21	1.00	0.54 <sup>**</sup>	0.41 <sup>*</sup>
Q24 Pearson Correlation	0.35	0.48 <sup>**</sup>	0.04	0.54 <sup>**</sup>	1.00	0.55 <sup>**</sup>
Q28 Pearson Correlation	0.32	0.55 <sup>**</sup>	0.00	0.41 <sup>*</sup>	0.55 <sup>**</sup>	1.00

\*\*= prob<0.01, \*=prob<0.05 (2-tailed)

*Table 46: Descriptive Statistics OCAI- Hierarchy*

	N	Mean	Std. Deviation
Q7	31	2.71	0.82
Q11	31	2.68	0.70
Q15	32	2.50	0.67
Q20	32	2.66	0.79
Q24	32	2.84	0.63
Q28	32	2.75	0.72

The results from Table 45 show high positive statistical significant correlations of 0.55 between Question 28 –where the individual perceives that the organisation views success by smooth delivery and dependable production and Question 11- where the senior management are perceived to exemplify smooth scheduling and efficiency in operation. Similarly, statistically significant positive correlations of 0.55 was found between Question 24 – the organisation is focused on permanence, control and stability and Question – 28 the individual perceives the organisation’s success as smooth delivery and dependable production.